

INTERIM SUBMITTAL

ENERGY SURVEY OF  
EISENHOWER ARMY MEDICAL CENTER  
FORT GORDON  
AUGUSTA, GEORGIA

VOLUME III  
FIELD INVESTIGATION NOTES

CONTRACT NO. DACA01-94-D-0038

PREPARED FOR:

U.S. ARMY CORPS OF ENGINEERS  
SAVANNAH DISTRICT

PREPARED BY:

DTIC QUALITY INSPECTED 2

REYNOLDS, SMITH AND HILLS, INC.  
AEROSPACE AND DEFENSE PROGRAM  
4651 SALISBURY ROAD  
JACKSONVILLE, FLORIDA 32256

PROJECT NO. 6941331005

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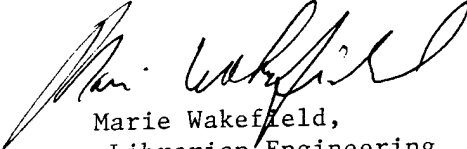


DEPARTMENT OF THE ARMY  
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Marie Wakefield,  
Librarian Engineering

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# BUILDING DATA SHEET

Building Energy Monitor: Eisenhower AMC Phone: 10/24/95

Building Number: 300 Age 1976

## Construction Data:

Number of Floors 13 Areas: Floor 590,629 sf Roof 27,038 sf

Windows: # of panes 1 Storms - Blinds/drapes/tint Blinds & drapes

Condition, caulking, weatherstripping? W/S missing on N facing ext. doors

Wall construction? \_\_\_\_\_

Condition, caulking, weatherstripping? \_\_\_\_\_

Roof construction? \_\_\_\_\_

Condition? \_\_\_\_\_

U-Values: Walls \_\_\_\_\_ Roof \_\_\_\_\_ Glass \_\_\_\_\_

Areas: E Wall \_\_\_\_\_ W Wall \_\_\_\_\_ N Wall \_\_\_\_\_ S Wall \_\_\_\_\_

E Glass \_\_\_\_\_ W Glass \_\_\_\_\_ N Glass \_\_\_\_\_ S Glass \_\_\_\_\_

Access points: \_\_\_\_\_

Vestibules? \_\_\_\_\_

Loading dock door seals? Not necessary - separate doors to open dock

Areas with special requirements: \_\_\_\_\_

Modifications to original design: Numerous interior changes

Addition of MRI and Family Practice wings on East side of hospital

General Conditions/Comments/Problems: \_\_\_\_\_

Population 2800 total max 2000 during day 400 for each of other two shifts

2<sup>ND</sup> FUR cell ht 9' - records - hallways 8'

MRI - 8' cell - Fam Pract Office 8'6"

# BUILDING DATA SHEET (continued)

## Schedules:

By floor or function : 5<sup>th</sup> - 13<sup>th</sup> 24 h/day

1<sup>st</sup> Labs are 24 h/day - remainder 7:30 - 4:00

2<sup>nd</sup> Radiology, Emerg., Info desk - 24 h/day

3<sup>rd</sup> SICU, Pharmacy, CMS (sterilization)

OR closes at 4 PM but does emerg.

4<sup>th</sup> Closes at 4 PM

100% AHU's op. continuously

0500-1900 ALL DAYS Cleaning out at 2300

Cafeteria 0545-1730 M-F WEH 0630-1300 Serving hrs.

Pneumatic tube 24 h/day - pharmacy uses mainly

Power Selectimatic 129 - 2 tube send & receive -

Elevator Ten - 4 service 6 passenger - All solid state

Cleaning 4 PM - midnight - supposed to turn off lights

Potential for night setback of space temperatures or AHU shut off

4<sup>th</sup> Floor

Can emergency generator be used for load shedding? 2100 kw & 800 kw

6:30 AM first Wed. of each month - Already done

800 kw parallels until 2100 picks up

what electric loads can be shed?

BUILDING DATA NOTES

Survey by: \_\_\_\_\_

Date: \_\_\_\_\_

Notes & Comments: \_\_\_\_\_

- maintains  $\sim 50^{\circ}\text{F}$

- Econo - opens at  $\sim 50^{\circ}\text{F}$ ? Ask Harold

968 T'STATS

Billgotts - electrician

Booster pumps are in 1A

FIRE ALARM SYSTEM IS FUNDED

KITCHEN SUPPLY FAN in 3-A tool crib

5th SW corner AHU loc.

$\sim 20$  new supply fans in 1-3

5E is short on cap.

791-0376/4243 Gent's #

# BUILDING DATA NOTES

Survey by: Paul Hutchins

Date: 10/23/95

Notes & Comments: Jack Keith

Reviewed approved projects

Boiler economizers - remove

Chillers - replace + VSD CT Fans + SCWP

Beds 720 → 420

~~Bill~~ fuel & MCS in next 3 mos.

Jack hangs at Boiler Plant

Curt 791-4241/43/6376 8:00 - 4:30 - 5:00

Jack 781-3220/B165 6:00 - 5:00

Rob Colahan

Bldg 299 MRI Kenneth Emrhen - Mech HVAC

2 DX Split systems for space cooling

#2 - TRANE - Mod # TTA090A300AA

Ser # E38191755

#1 TRANE - Mod # TTA036A300B0

Ser # E46295018

Liebert - Mod # FH199A4400

Ser # 142547A

Space Cooling

MRI Equip.

Set 45% 1% Range  
69°F 1% Range

Reading

47

71

Mode

Def.

(log)

Mechanics

Harold - Controls

Ken - HVAC

John Lilly - Supervisor

Economizers rarely work automatically - Usually done manually  
Timed clock in Fan Plant but runs always because some Drs sleep there  
~ 20 extra fans/coils added

BUILDING DATA NOTES

Survey by: P. Hutchins Date: 10/24/95

Notes & Comments: Bob Calhoun Johnson Controls Mgr.

300 kW gen. parallel utility can be man. brought on-line  
at any time (replaced 300 kW)

2100 kW gen. is used to handle two chillers, <sup>10</sup> elevators  
and several AHUs in hoop.

- All TSTATs are pneumatic and control reheat boxes
- No central reporting system

Medical barracks taken off power meter ~ 12/94

Ask J.K. 2000 kW gen

JK thinks the 2100 kW has a lot of life left  
Not planned to parallel -  
Just replace existing one

Newcomb & Boyd Jeff Riser

John Hangerone has boiler water treatment

Humidifiers - 5 MKU, 5<sup>th</sup>, Dental

Gordon Griffin -



# BUILDING DATA NOTES

Survey by: Hutchins

Date: 10/26/95

Notes & Comments: \_\_\_\_\_

Panel Reading 2<sup>nd</sup> FLR Mech Rm 8:10 AM

① SA 53 OA 44 (act 46) STM AP 80 psig  
RA 77 CWR 47 LP 28 psig

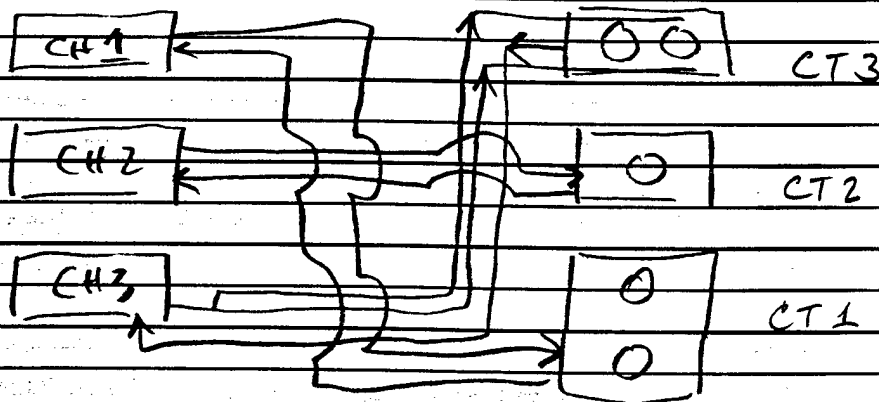
② SA 51 OA 43 CWS 40 HWS 154  
RA 76 CWR 47 HWR 140

OSA Dampers 25% open  
RTN " 15% closed

Prob 30 ft of insulation missing on DHW line in 2<sup>nd</sup> FLR MECHRM.

Float valve still stuck open on Gen. cooling tower  
Flow rate - fills small coffee cup in 2 sec.  
Leaking since last visit ~ 1 month earlier

N →



HOSPITAL

BUILDING DATA NOTES

Survey by: \_\_\_\_\_

Date: \_\_\_\_\_

Notes & Comments: (912) 652-5246 Rob Callahan

HW Reheat units

$\frac{1}{2}$ " 3-way control valves

Kneeger Detroit Div

Leak-Siegler

Size CVMP-R4

190 cfm

V4054 4 row coil

Run 1A-23

# BUILDING DATA (continued)

HVAC THERMOSTAT SETPOINTS (F), TEMPS, RELATIVE HUMIDITY (%RH) & LIGHT LEVELS (FC)

	Setpoints		Temps		Ft Cndl	Location
	Heat	Cool	Meas'd	RH		
1.		74	76	55		6TH FLOOR OUTSIDE RM 6B01
2.		71	76	58		6TH FLOOR 6B56" OR.
3.		69	76	63	40	5TH ELEV. LOBBY (6)
4.			76	63		" 5C-13 (HOT LAST 3 Summers)
5.		74	80	51		4TH FL. MAIN LOBBY
6.					55	1st Pathology Off.
7.					63	1st Occupation & Therapy
8.					13-29	2nd Hallways
9.						
10.						
11.			79		50	3rd Flr Kitchen
12.			72			3rd - Linen
13.					13-21	3rd Warehouse
14.		70	76			3rd - Warehouse office
15.					12	5B-17 Lockers/computers (Patient Rm)
16.					55-60	5B-31 Break Rm
17.					10	5B-53 office (Patient Rm)
18.	55		73/54	20	25-35	5B-46 Conference Rm
19.						
20.						

## Lighting Type Examles:

	Fixture	Lamp	Ballast	Lamps/	Hr/	Location
	Type	Model	Model	Fixt	Wk	
1.	1x4 W.R.	F40 CW	Adv. R2S40-1-TP	2		MECH RM
2.	2x4 Rec. Acryl	F40 CW	Mark III Adv	4		Caf Rm - MRT
3.						
4.						
5.						
6.						
7.						
8.						

General Conditions/Comments/Problems:

# BUILDING DATA (continued)

HVAC THERMOSTAT SETPOINTS (F), TEMPS, RELATIVE HUMIDITY (%RH) & LIGHT LEVELS (FC)

	Setpoints		Temps		Ft. Cndl	Location
	Heat	Cool	Meas'd	RH		
1.					1.5-34	1 <sup>st</sup> Floor hallways (avg 23 fc)
2.						Some lamps out cause low readings
3.					13	2 <sup>nd</sup> Flr hallways (every other fixt. out)
4.					25	Other non de-lamped hallways
5.					28	2 <sup>nd</sup> Floor lobby
6.			72.0		27	5 <sup>th</sup> hallways
7.					8	" " with delamping
8.			73.5		7-10	6 <sup>th</sup> hallways " "
9.					38	7 <sup>th</sup> "
10.					29-30	8 <sup>th</sup> "
11.					29-30	9 <sup>th</sup> "
12.					34	10 <sup>th</sup> " new TB
13.					35	11 <sup>th</sup> "
14.			74.8		50	11 <sup>th</sup> elevator lobby
15.					13-15	14 <sup>th</sup>
16.			71-73		24	12 <sup>th</sup> lobby & hallways
17.			79		33	13 <sup>th</sup> Nurse's station
18.			72/53		103	2nd Fl Rm 16 Treatment F. Practice
19.			73/54		55-60	Family Practice waiting/reception area
20.					95/40	" " office area; multi-switched
					4L 2L	77 ft. cd w/2L and task lights at desk → 1-4' lamp

## Lighting Type Examples:

	Fixture	Lamp	Ballast	Lamps/	Hr/	
	Type	Model	Model	Fixt	Wk	Location
1.	Small eggcrate	Octron 350K F32T35		2	168	10 <sup>th</sup> FLR HALL
2.	2x2 Eggcrate	F40/30BX/SPX35	MZ-RN-TB-40 <sup>(1)</sup>	2	168	10 <sup>th</sup> FLR Elev. Lobby
3.	2 lamp ind.	F40 CW			168	14 <sup>th</sup>
4.			Jiff. 300/9708801	2	168	11 <sup>th</sup>
5.	4-2x4 w/ACR lns	F40 CW	92 input watts	2 pat ~	64/65	3D-1 GG
6.						
7.						
8.						

## General Conditions/Comments/Problems:

" Motorola  
 Family Practice ~ 7:30 am - 9 pm M-F, 8-12 sat, <sup>closed</sup> ~~open~~ Sunday  
 Exit sign w/ 2-15W inc. lamps & 2 emerg. lamps ~ 24 total  
 U-tube lamps are 34-w; 4' T12's are 34-w.  
 Office area can use 2 lamps overhead w/ task lights

# BUILDING DATA (continued)

HVAC THERMOSTAT SETPOINTS (F), TEMPS, RELATIVE HUMIDITY (%RH) & LIGHT LEVELS (FC)

	Setpoints		Temps		Ft Cndl	Location
	Heat	Cool	Meas'd	RH		
1.		68	65	65	15.2	ELEV. MACH CONTROL RM (14)
2.		68	66	80		ELEV. 1-6 MACH CONT RM CONT (14)
3.		78	75	62	10.3	ELEV MACH RM (14)
4.			75	70	10.5	ELEV. LOBBY (13)
5.		76				E. NURSE STAT
6.		75				W " "
7.			74	70	15	12 <sup>TH</sup> FLOOR ELEV-LOBBY
8.		72				12 <sup>TH</sup> " NURS STAT E
9.		79	75	78		" " " W ALL OFFICE
10.		75	78	74	50	11 <sup>TH</sup> FL ELEV LOBBY
11.		75			35	" HALLWAY
12.		60	78	82		10 TH. RM 101 TOILET ANTI RM
13.						2- INCA 10. FIXT AIR RETURN.
14.						100-18. 5-B. NEW.
15.			75	62		9 <sup>TH</sup> FL ELEV. LOBBY (16)
16.		74				9 FL. WEST
17.		72	78	60		8 <sup>TH</sup> FL. WEST
18.		73	75	70		" " BD-39
19.			75/55.5		10-55	2nd FL Records (Desks have task light)
20.						

## Lighting Type Examles:

	Fixture	Lamp	Ballast	Lamps/	Hr/	Location
	Type	Model	Model	Fixt	Wk	
1.	14 BAKI			2		ELEV. MACH
2.	New 2x4 acrylic lens	F40 CW	MARK III Adv.	2		Records - 2 <sup>ND</sup> FLR
3.	Older 2x4 corfl. lens	F40 CW	-	2		Records. "
4.						
5.						
6.						
7.						
8.						

## General Conditions/Comments/Problems:

WEST END 12<sup>TH</sup> F ALL OFFICE SPACE PART. RELOCATED

ALL CORR. LIGHTS ARE ON.

10<sup>TH</sup> ALL NEW FIXT SEE E-53 / NURSE STAT 4L PRISMATIC

9<sup>TH</sup> ALL CORR. FIXT ARE ON. 2L-2X4 PRISMATIC K12 LENSE

8<sup>TH</sup> E thermostat broken

BUILDING DATA NOTES

Survey by: F.N.

Date: 10/25/95

Notes & Comments: Computer center, 1<sup>ST</sup> FL 68/95 66/49

THERM. SET. 80 READ. 68

THERMOTE HANG FROM CEIL. 68. 27-2X4-2C

Hot water measurements - bathrooms

9<sup>th</sup> Flr - 117°F

6<sup>th</sup> Flr - 115°F

5<sup>th</sup> Flr - 115°F

BUILDING DATA (continued)

Lights on in unoccupied areas?

Locations 14<sup>TH</sup> FLR MECH RM - LEFT ON

12<sup>TH</sup> KITCH UNIT, GROUP THERAPY LEFT ON

Need for separate switching?

Locations

Occupancy sensors for lights or HVAC?

Locations 9<sup>TH</sup> FL. 9B-06 LOUNGE 12-2L 2X4 4-2X2-2LU +TV  
9A-54 NURSE MED. PREP. 5-2X4-2L  
9A-53 LINEN 5-2X4-2L  
10<sup>TH</sup> 10B-06 LOUNGE NEW 12-2L REC. COTTRON LAMPS

Hot water temperature and flow rate samples:

Locations

Flow restrictor application?

Locations

Automatic shut-off faucet application?

Locations

BUILDING DATA NOTES

Survey by: F. NEW

Date: 10-27-95

Notes & Comments: ROOF ELEVATOR MACHINE ROOM ROOF  
OUTSIDE A/C UNIT FOR ELEVATOR SOLID STATE CONTROLLER  
EQUIPMENT ROOMS. WEST UNIT SERVES ELEV. 1-6  
EAST UNIT SERVES ELEV 6-10.

CARRIER DX SER. NO. 2692E17377

MOD. NO. 3BTK8038300

FACT. CHARGE R22 6.38 LBS

COMP. 208/230V 1Ø

1HP 60HZ 17.1A

FAN. 1/4HP 1.4A

HIGH 450PSI

LOW 210PSI



BUILDING DATA NOTES

Survey by: F. NEW

Date: 10-25-95

Notes & Comments:

1. 2<sup>ND</sup> FLOOR PHARMACY LOBBY Rm 2C-1 175W MER. V
2. 4TH FLOOR LOBBY 4B-23 ALL RECESSED LENSED FIXT. HAVE 52W LAMPS
3. 3RD STORAGE RM 3M-1 SUSP. FIX. 175-LB MER. V.
4. 4TH FLOOR LOBBY 4B-4 + OFFICES ALONG SW + WEST SIDE OF BUILDING HAVE 175W MER. V.
5. NEW PATIENT FIXTURES (WALL MOUNTED) WILL HAVE 4-40W T8 LAMPS. (PAIRS SWITCHED SEPARATELY,
6. Rm 1C-14 AUDITORIUM
  - 64- CIRCLINE 2L FIXT. 1-22W, 1-32W
  - 38 - INCAN. STAGE LAMPS
  - 11 -
  - 8 - 52 - WALL INCANDESCENT
  - 2 - 2x4 - 2L F40CW RECESSED

BUILDING DATA NOTES

Survey by: \_\_\_\_\_

Date: 10/25/95

Notes & Comments: \_\_\_\_\_

Jim Paulisek

Spot Cooling  
First Floor LAB - 4

BUILDING DATA NOTES

Survey by: \_\_\_\_\_

Date: 10/27/95

Notes & Comments: Entrance Interview

Atlanta Gas Light Co.  
Ian Skelton (706) 481-1484

Georgia Pwr. Co. (706) 823-4532  
Michael Richardson

Col. Plank

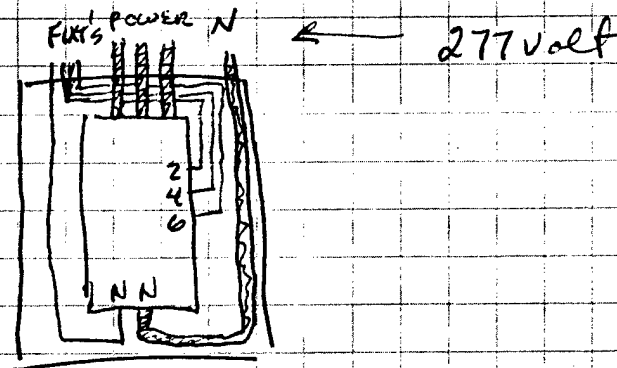
New equipment - growth factor for new elec equip.

Get copy of survey forms to Bob C.

## Harmonics Analysis ETMC

1	10 <sup>th</sup> FLR	Circuit 2	5.06 10	Lighting Panel
2	"	Neutral (Large)	2.06	<del>75.6</del> 75.6
3	"	Circ 2	9.13 (8.4)	10 RPZ $\frac{1}{2}$ 11 RPZ
4	"	Circ 4	5.06	22.8
5	"	#6	1.44	24.3
6	"	Large Neutral	3.64	109.2%
7	"	Small N	3.64	10.99
8	10 <sup>th</sup>	Circ 4	6.93	19.0
9	"	Circ 6	4.31	12.7
10	"	Small Neutral	2.04	96.2

10<sup>th</sup> FLR = 25 26 fixtures 3 in TM 2 stairwell, 1 alc closet  
 11<sup>th</sup> 30 26 fixtures



## Panel RPZ

TB's Installed in corridors and patient room  
 overhead fixtures - Corridors are 2x4 26 TB's (270v)  
 Overhead are 4ft box wall-mounted (120v)  
 4 lamp with 2 way switch to control 2 lamps  
 at a time - Installed summer '95  
 All fixtures are new - ~~Doing~~ Old 8<sup>th</sup> floor  
 in Dec. Will do 3 or 4 more floors next cal. yr.  
 Expect to do all patient floors

## Kitchen Equip.

10/26/95

### Dishwasher:

Hobart Model FTM 822

First wash at  $\sim 120^{\circ}\text{F}$

Final rinse at  $\sim 180 - 200^{\circ}\text{F}$

### Steam Kettles:

5 Kettles  $\sim 30 - 40$  gal each

35 psi steam requirement

### Steam Ovens:

4 steamers (all small)

$\sim 1/2"$  steam pipe

15 psi steam required

### Pots & Pans Washer:

$150^{\circ}\text{F}$  wash

$180^{\circ}\text{F}$  rinse

15 - 25 psi steam required

#1

## AIR HANDLING UNIT DATA SHEET

AHU I.D. No.: #1  
A234  
SF-1 Location: 2nd Fl. Date: 10/24Manufacturer Name: P/P Model: P 490AHU Characteristics : ORDER  
Serial #: AF8448Supply: X Return X Exhaust: X Class: 3Flow control? Constant X VSD      Inlet Guide Vanes      Other     Is motor in airstream? Supply X Return      No     Smoke detector? Y Smoke damper? O.AHumidifier type None Condition     Economizer function? Yes Operating correctly? NO On temp. 55-56°FHeat recovery potential?     Chilled water valves: 2-way      3-way X Balancing valve     ~~Hot water~~ valves: 2-way X 3-way      Balancing valve     Coils: Preheat:      Cooling:      Heat:      Reheat:     Air Filter Type: Prefilter     After filter     Air Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     Measured: OSA 74.5 Rtn      Mixed 78.6 LPrHt      LCC 55.1 LHC 56.5Air Flows: Nameplate: CFM 69000 S.P. 6.5 RPM 921?Measured : CFM      S.P. 6.4 RPM 1067Cooling capacity Tons: Design      Calculated     Heating capacity Tons: Design      Calculated     System description/Set points:     Operation schedule:/Set points:     Areas served:     Condition/Comments/Problems:     Motor: Linequard dripproof, 404T, 100 hp, 230/460v, 240/120A.  
code: TV-2734-AL, SN 905764, 1775 RPMC. coils, sometimes bent, a little missingSketch AHU (show measurements)     

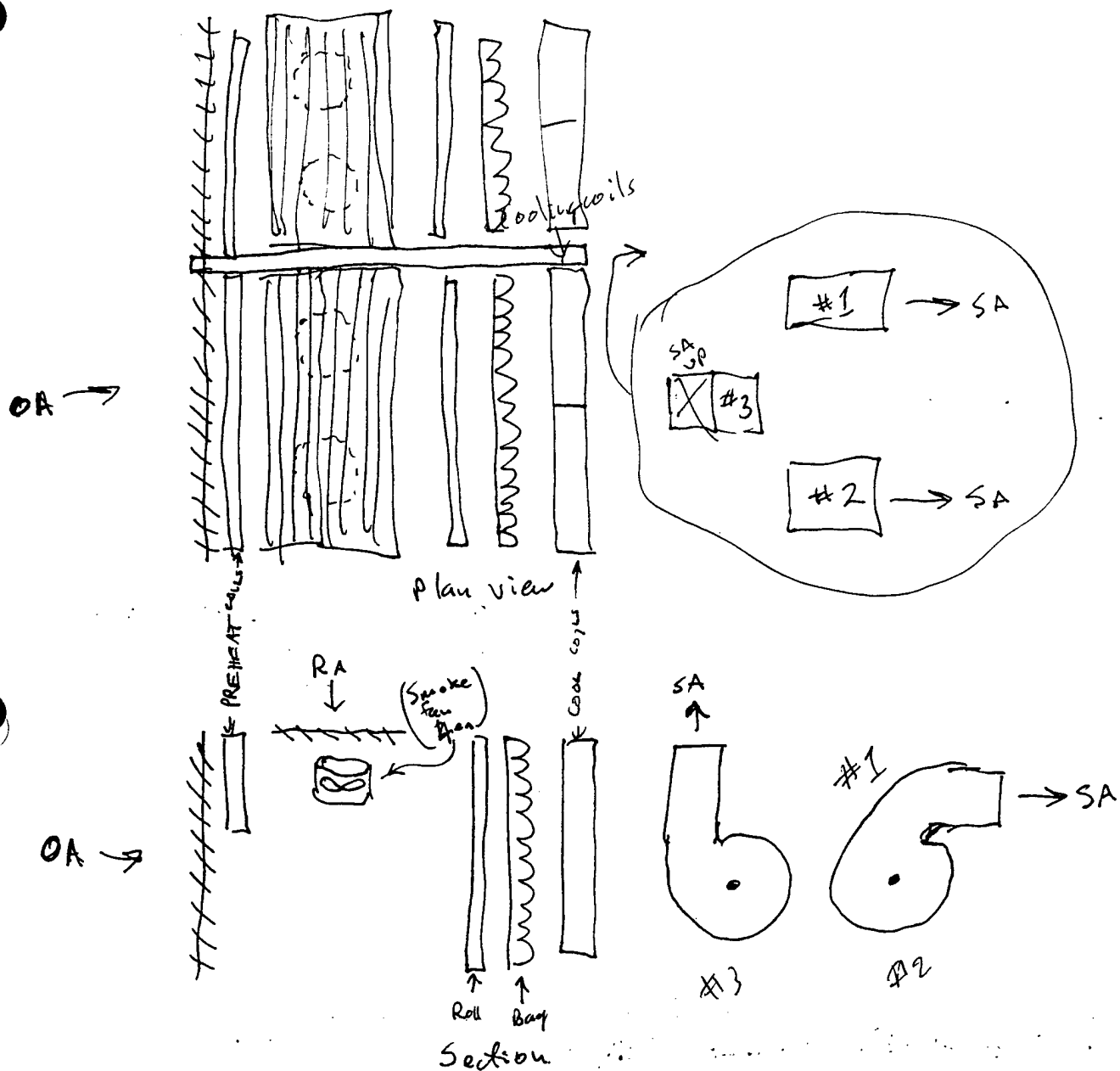
AH-1

#12

#231

## AIR HANDLING UNIT DATA SHEET

AHU I.D. No.: SF-2 Location: 2nd Fl. Date: 10-24Manufacturer Name: PEERLESS / PORTER Model: P 542AHU Characteristics : ORDER Serial #: AFB 448Supply: X Return X Exhaust: X Class: 3Flow control? Constant X VSD      Inlet Guide Vanes      Other     Is motor in airstream? Supply X Return      No     Smoke detector? YES Smoke damper? OA.Humidifier type None Condition     Economizer function? Yes Operating correctly? NO On temp. 55-56°FHeat recovery potential?     Chilled water valves: 2-way      3-way X Balancing valve     ~~Hot water~~ <sup>Steam</sup> valves: 2-way X 3-way      Balancing valve     Coils: Preheat: X Cooling: X Heat:      Reheat:     Air Filter Type: Prefilter RollAfter filter BagAir Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     Measured: OSA 65.5 Rtn 81.0 Mixed 78.0 LPrHt NA LCC 54.0 LHC NOPEAir Flows: Nameplate: CFM 74000 S.P. 6.5 RPM 798Measured : CFM      S.P. 5.7 RPM 880Cooling capacity Tons: Design      Calculated     Heating capacity Tons: Design      Calculated     System description/Set points:     Operation schedule:/Set points:     Areas served:     Condition/Comments/Problems: Roll Filters (2 of 3) are very dirty, bag  
Filters appear dirty. Coils are fairly clean.Motor: Lincoln dripproof, 100 hp, 1775 rpm, 230/460V, 240/120A  
code TV 2734-A1, SN 905733Sketch AHU (show measurements) AH-2



CALC OA % = 19.4

AHU 1, 2, 3



#3

## AIR HANDLING UNIT DATA SHEET

#3  
#232  
AHU I.D. No.: SF-3 Location: 2nd Fl. Date: 10/24  
 Manufacturer Name: P/P Model: P 490  
 AHU Characteristics : ORDER Serial #: AF8448  
 Supply: X Return X Exhaust: X Class: 3  
 Flow control? Constant X VSD      Inlet Guide Vanes      Other       
 Is motor in airstream? Supply X Return      No       
 Smoke detector? Y Smoke damper? O.A.  
 Humidifier type None Condition       
 Economizer function? Yes Operating correctly? NO On temp. ~55-56°F  
Relay or adjusters not working properly - RA only  
 Heat recovery potential?     

Chilled water valves: 2-way      3-way      Balancing valve     ~~Hot water~~ <sup>Steam</sup> valves: 2-way      3-way      Balancing valve     Coils: Preheat:      Cooling:      Heat:      Reheat:     Air Filter Type: Prefilter     After filter     Air Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     Measured: OSA      Rtn      Mixed      LPrHt      LCC      LHC     Air Flows: Nameplate: CFM 61000 S.P. 6.5 RPM 886Measured : CFM      S.P. 6.6 RPM 1069Cooling capacity Tons: Design      Calculated     Heating capacity Tons: Design      Calculated     System description/Set points:     Operation schedule:/Set points:     Areas served:     Condition/Comments/Problems:     

Motor: Lincoln, LINCOLN DRIPPROFF, 704 T, 100 hp, 230/460v, 238/119A  
 1770 RPM, SF=1.15, code TV-3420-A1, SN 2243351

Sketch AHU (show measurements)     

AH-4

SF-3

3RD Floor

OA below  
at 2nd Fl level.

return  
air down

Relief  
at below  
2nd  
Fl level

R.A.  
Down

1.5' x 2'

1-A

← RA

1-B

← RA

install  
turning  
vanes,  
bad for  
relief

AH-5

Return Fan for #1, 2 & 3

AIR HANDLING UNIT DATA SHEET

1-A

AHU I.D. No.: RA-1 Location: 3RD FL. Date: 10/24

Manufacturer Name: P/P Model: 60

AHU Characteristics : ORDER Serial #: AF 8464

Supply:      Return      Exhaust:     

Flow control? Constant X VSD      Inlet Guide Vanes      Other     

Is motor in airstream? Supply      Return      No     

Smoke detector?      Smoke damper?     

Humidifier type      Condition     

Economizer function?      Operating correctly?      On temp.     

Heat recovery potential?     

Chilled water valves: 2-way      3-way      Balancing valve     

Hot water valves: 2-way      3-way      Balancing valve     

Coils: Preheat:      Cooling:      Heat:      Reheat:     

Air Filter Type: Prefilter     

After filter     

Air Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Measured: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Air Flows: Nameplate: CFM 61000 S.P. 2.0 RPM 784

Measured : CFM      S.P. 0.4 / 1.4 RPM     

Cooling capacity Tons: Design      Calculated       $1.4 - 0.4 =$

Heating capacity Tons: Design      Calculated     

System description/Set points:     

Operation schedule:/Set points:     

Areas served:     

Condition/Comments/Problems: Dampers at closed position

Sketch AHU (show measurements) AH-6

Return Fan For # 1, 2 & 3  
AIR HANDLING UNIT DATA SHEET

1-B

AHU I.D. No.: RA-1 Location: 2nd fl Date: \_\_\_\_\_

Manufacturer Name: P/P Model: 60

AHU Characteristics : ~~ORDER~~ Serial #: AF 8464

Supply: \_\_\_\_\_ Return \_\_\_\_\_ Exhaust: \_\_\_\_\_

Flow control? Constant \_\_\_\_\_ VSD \_\_\_\_\_ Inlet Guide Vanes \_\_\_\_\_ Other \_\_\_\_\_

Is motor in airstream? Supply \_\_\_\_\_ Return \_\_\_\_\_ No \_\_\_\_\_

Smoke detector? \_\_\_\_\_ Smoke damper? \_\_\_\_\_

Humidifier type \_\_\_\_\_ Condition \_\_\_\_\_

Economizer function? \_\_\_\_\_ Operating correctly? \_\_\_\_\_ On temp. \_\_\_\_\_

Heat recovery potential? \_\_\_\_\_

Chilled water valves: 2-way \_\_\_\_\_ 3-way \_\_\_\_\_ Balancing valve \_\_\_\_\_

Hot water valves: 2-way \_\_\_\_\_ 3-way \_\_\_\_\_ Balancing valve \_\_\_\_\_

Coils: Preheat: \_\_\_\_\_ Cooling: \_\_\_\_\_ Heat: \_\_\_\_\_ Reheat: \_\_\_\_\_

Air Filter Type: Prefilter \_\_\_\_\_

After filter \_\_\_\_\_

Air Temp's: Design: OSA \_\_\_\_\_ Rtn \_\_\_\_\_ Mixed \_\_\_\_\_ LPrHt \_\_\_\_\_ LCC \_\_\_\_\_ LHC \_\_\_\_\_

Measured: OSA \_\_\_\_\_ Rtn \_\_\_\_\_ Mixed \_\_\_\_\_ LPrHt \_\_\_\_\_ LCC \_\_\_\_\_ LHC \_\_\_\_\_

Air Flows: Nameplate: CFM 61000 S.P. AF2.0 BF RPM 784

Measured : CFM \_\_\_\_\_ S.P. + .65 / 1.27 RPM \_\_\_\_\_

Cooling capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_  $\rightarrow 1.27 - 0.65 =$

Heating capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

System description/Set points: \_\_\_\_\_

Operation schedule:/Set points: \_\_\_\_\_

Areas served: \_\_\_\_\_

Condition/Comments/Problems: Dampers ~ 25% open

Sketch AHU (show measurements) AH-7

# AIR HANDLING UNIT DATA SHEET

SF-4A

AHU I.D. No.: 236 Location: 14<sup>TH</sup> (EAST) Date: 10/24/95

Manufacturer Name: Peerless Model: P542 SF-4

AHU Characteristics : Serial #: AF 8448

Supply: X Return X Exhaust: X

Flow control? Constant X VSD      Inlet Guide Vanes      Other     

Is motor in airstream? Supply      Return X No     

Smoke detector?      Smoke damper?     

Humidifier type None Condition     

Economizer function? YES Operating correctly? NO On temp. 50°F

Heat recovery potential?     

Chilled water valves: 2-way      3-way X Balancing valve     

~~Hot water~~ <sup>Steam</sup> valves: 2-way X 3-way      Balancing valve     

Coils: Preheat: ✓ Cooling: ✓ Heat:      Reheat:     

Air Filter Type: Prefilter Roll; 2" thick  
After filter BAG. }  $\Delta P = 0.40$

Air Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Measured: OSA 64.8 Rtn 75.6 Mixed 72.5 LPrHt      LCC 56.5 LHC     

Air Flows: Nameplate: CFM 83000 S.P. 7.0 RPM 847

Measured : CFM      S.P. 5.5 RPM 890

Cooling capacity Tons: Design      Calculated     

Heating capacity Tons: Design      Calculated     

System description/Set points:     

Operation schedule:/Set points:     

Areas served:     

Condition/Comments/Problems: cooling coils fairly clean - some dust, some fins

Motor 125 hp, 292/146A, 230/460V, 1779 RPM, SF=1.15

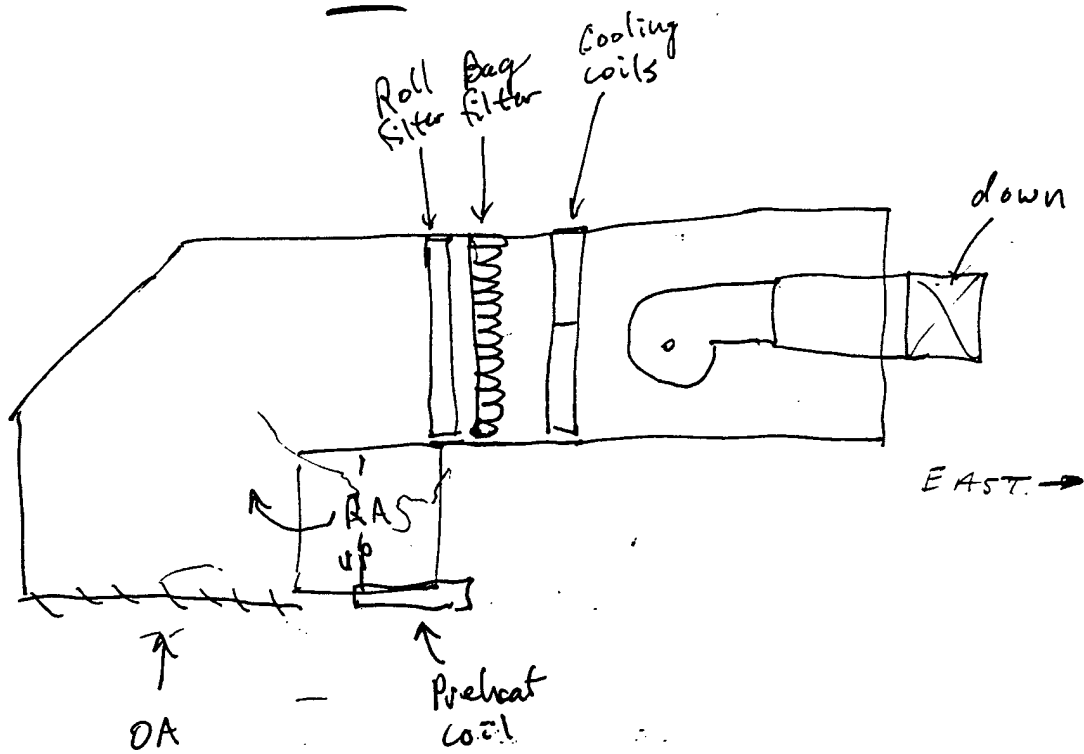
Cont. Dropproof

1 damper blade missing from O.A. & Relief air dampers

Sketch AHU (show measurements) See back

AH-B

SF 4A



PLAN VIEW

CALC DA = 28.7%

AH-9

# AIR HANDLING UNIT DATA SHEET

AHU I.D. No.: RA-2A Location: 14th FL EAST Date: 10-24-95

Manufacturer Name: PEERLESS Model: 60

AHU Characteristics : Serial #: \_\_\_\_\_

Supply: \_\_\_\_\_ Return \_\_\_\_\_ Exhaust: \_\_\_\_\_

Flow control? Constant \_\_\_\_\_ VSD \_\_\_\_\_ Inlet <sup>Manual</sup> Guide Vanes X Other \_\_\_\_\_

Is motor in airstream? Supply \_\_\_\_\_ Return \_\_\_\_\_ No X

Smoke detector? \_\_\_\_\_ Smoke damper? \_\_\_\_\_

Humidifier type \_\_\_\_\_ Condition \_\_\_\_\_

Economizer function? \_\_\_\_\_ Operating correctly? \_\_\_\_\_ On temp. \_\_\_\_\_

Heat recovery potential? \_\_\_\_\_

Chilled water valves: 2-way \_\_\_\_\_ 3-way \_\_\_\_\_ Balancing valve \_\_\_\_\_

Hot water valves: 2-way \_\_\_\_\_ 3-way \_\_\_\_\_ Balancing valve \_\_\_\_\_

Coils: Preheat: \_\_\_\_\_ Cooling: \_\_\_\_\_ Heat: \_\_\_\_\_ Reheat: \_\_\_\_\_

Air Filter Type: Prefilter \_\_\_\_\_

After filter \_\_\_\_\_

Air Temp's: Design: OSA \_\_\_\_\_ Rtn \_\_\_\_\_ Mixed \_\_\_\_\_ LPrHt \_\_\_\_\_ LCC \_\_\_\_\_ LHC \_\_\_\_\_

Measured: OSA \_\_\_\_\_ Rtn \_\_\_\_\_ Mixed \_\_\_\_\_ LPrHt \_\_\_\_\_ LCC \_\_\_\_\_ LHC \_\_\_\_\_

Air Flows: Nameplate: CFM \_\_\_\_\_ S.P. -1.0/-0.2 RPM \_\_\_\_\_

Measured : CFM \_\_\_\_\_ S.P. \_\_\_\_\_ RPM \_\_\_\_\_

Cooling capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

Heating capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

System description/Set points: \_\_\_\_\_

Operation schedule:/Set points: \_\_\_\_\_

Areas served: \_\_\_\_\_

Condition/Comments/Problems: \_\_\_\_\_

Manual VAV's are on ~~lowest~~ <sup>max</sup> setting.

Sketch AHU (show measurements) AH-10

# AIR HANDLING UNIT DATA SHEET

SF-4B

AHU I.D. No.: #235 Location: 14-41A - West Date: 10-24-95

Manufacturer Name: PEERLESS Model: P542 ; CL#3

AHU Characteristics : Serial #: AF8448

Supply: X Return X Exhaust: X

Flow control? Constant X VSD      Inlet Guide Vanes      Other     

Is motor in airstream? Supply X Return      No     

Smoke detector? Yes Smoke damper?     

Humidifier type None Condition     

Economizer function? Yes Operating correctly? NO On temp. 200F

Heat recovery potential?     

Chilled water valves: 2-way      3-way X Balancing valve     

~~Hot water~~ <sup>Steam</sup> valves: 2-way X 3-way      Balancing valve     

Coils: Preheat: ✓ Cooling: ✓ Heat:      Reheat:     

Air Filter Type: Prefilter None 2" thick Roll 7  
After filter Bag }  $\Delta P = 0.45$

Air Temp's: Design: OSA      Rtn 76.0 Mixed      LPrHt      LCC      LHC     

Measured: OSA 71.9 Rtn 76.0 Mixed 74.5 LPrHt      LCC 55.6 LHC     

Air Flows: Nameplate: CFM 83000 S.P. 7.0 RPM 847

Measured : CFM      S.P. 5.75 RPM 876

Cooling capacity Tons: Design      Calculated     

Heating capacity Tons: Design      Calculated     

System description/Set points:     

Operation schedule:/Set points:     

Areas served:     

Condition/Comments/Problems: cooling coils are dusty, some bent fins

Motor Lincoln, 125 hp, 1770 RPM, 288/144 A, 230/460V

vema now off = 93.6, 405T, LINGGUARD DRIPPROOF

Relief Air damper linkage is coming loose from wall - will not open

O.A. dampers will not fully open

Sketch AHU (show measurements) same as east unit but oppsite hand

AH-11



VIV max open

AIR HANDLING UNIT DATA SHEET

AHU I.D. No.: RA-2B Location: 14th Fl. West Date: 10-24-95  
Manufacturer Name: PEERLESS Model: 60; P.N. 605001/RA-2  
AHU Characteristics : Serial #: ORDER # AF8464

Supply:      Return      Exhaust:       
Flow control? Constant      VSD      Inlet Guide Vanes manual ☒ Other     

Is motor in airstream? Supply      Return      No     

Smoke detector?      Smoke damper?     

Humidifier type      Condition     

Economizer function?      Operating correctly?      On temp.     

Heat recovery potential?     

Chilled water valves: 2-way      3-way      Balancing valve     

Hot water valves: 2-way      3-way      Balancing valve     

Coils: Preheat:      Cooling:      Heat:      Reheat:     

Air Filter Type: Prefilter       
After filter     

Air Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Measured: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Air Flows: Nameplate: CFM 4500 S.P. 1.75 RPM 771

Measured : CFM      S.P. -1.0/0.0 RPM     

Cooling capacity Tons: Design      Calculated     

Heating capacity Tons: Design      Calculated     

System description/Set points:     

Operation schedule:/Set points:     

Areas served: Toshiba

80304VLF1UD

Condition/Comments/Problems: 80/40 A 200A

Motor: 30 hp, 206T, 3ph, 1760 RPM, 230/460V, 1.15 SE  
fan dampers were open; rpm measured ~1690-1730

relief dampers above RA duct slightly cracked

Sketch AHU (show measurements)     

AH-12

# AIR HANDLING UNIT DATA SHEET

#233

AHU I.D. No.: SF-5 Location: 5th Fl. Date: 10/25

Manufacturer Name: Covered w/ insulation Model: \_\_\_\_\_

AHU Characteristics : Serial #: \_\_\_\_\_

Supply: X Return \_\_\_\_\_ Exhaust: \_\_\_\_\_

Flow control? Constant X VSD \_\_\_\_\_ Inlet Guide Vanes \_\_\_\_\_ Other \_\_\_\_\_

Is motor in airstream? Supply \_\_\_\_\_ Return \_\_\_\_\_ No X

Smoke detector? \_\_\_\_\_ Smoke damper? \_\_\_\_\_

Humidifier type \_\_\_\_\_ Condition \_\_\_\_\_

Economizer function? \_\_\_\_\_ Operating correctly? \_\_\_\_\_ On temp. \_\_\_\_\_

Heat recovery potential? \_\_\_\_\_

Chilled water valves: 2-way \_\_\_\_\_ 3-way X Balancing valve \_\_\_\_\_

~~Hot water~~ <sup>steam humidifier</sup> valves: 2-way \_\_\_\_\_ 3-way X Balancing valve \_\_\_\_\_

Coils: Preheat: \_\_\_\_\_ Cooling: X Heat: \_\_\_\_\_ Reheat: X

Air Filter Type: Prefilter Roll

After filter BAG

Air Temp's: Design: OSA \_\_\_\_\_ Rtn \_\_\_\_\_ Mixed \_\_\_\_\_ LPrHt \_\_\_\_\_ LCC \_\_\_\_\_ LHC \_\_\_\_\_

Measured: OSA 66 Rtn NA Mixed 73.1 LPrHt \_\_\_\_\_ LCC 52.0 LHC 55.8

Air Flows: Nameplate: CFM \_\_\_\_\_ S.P. \_\_\_\_\_ RPM \_\_\_\_\_ Covered w/

Measured : CFM \_\_\_\_\_ S.P. 5.6 RPM 1731 Insulation

Cooling capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

Heating capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

System description/Set points: Multi zone (13 zones?)

Operation schedule:/Set points: \_\_\_\_\_

Areas served: ICU & ORAL SURGERY

Condition/Comments/Problems: \_\_\_\_\_

Motor: 20hp, 1755 RPM, 230/460V, 50.2/25.1A,

Sketch AHU (show measurements) AH-13

#234

## AIR HANDLING UNIT DATA SHEET

AHU I.D. No.: SF6 Location: 3rd Fl. Date: 10/25  
Manufacturer Name: P/P Model: P330 DWDI

## AHU Characteristics :

Serial #: \_\_\_\_\_

Supply: ☒ Return \_\_\_\_\_ Exhaust: ☒Flow control? Constant ☒ VSD \_\_\_\_\_ Inlet Guide Vanes \_\_\_\_\_ Other \_\_\_\_\_Is motor in airstream? Supply ☒ Return \_\_\_\_\_ No \_\_\_\_\_

Smoke detector? \_\_\_\_\_ Smoke damper? \_\_\_\_\_

Humidifier type Steam Condition OKEconomizer function? No Operating correctly? \_\_\_\_\_ On temp. \_\_\_\_\_100% outside air

Heat recovery potential? \_\_\_\_\_

Steam preheat:  
Chilled water valves: 2-way \_\_\_\_\_ 3-way ☒ Balancing valve \_\_\_\_\_

Steam Humidifier  
~~Hot water~~ valves: 2-way ☒ 3-way ☒ Balancing valve \_\_\_\_\_

Coils: Preheat: ☒ Cooling: ☒ Heat: \_\_\_\_\_ Reheat: ☒Air Filter Type: Prefilter RollAfter filter Bag → 97% after humidifiers

Air Temp's: Design: OSA \_\_\_\_\_ Rtn \_\_\_\_\_ Mixed \_\_\_\_\_ LPrHt \_\_\_\_\_ LCC \_\_\_\_\_ LHC \_\_\_\_\_

Measured: OSA 78.7 Rtn NA Mixed 77.3 LPrHt NA LCC 57.3 LHC \_\_\_\_\_Air Flows: Nameplate: CFM 27000 S.P. 6.75 RPM 1363Measured : CFM \_\_\_\_\_ S.P. 5.5 RPM 1467

Cooling capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

Heating capacity Tons: Design \_\_\_\_\_ Calculated \_\_\_\_\_

System description/Set points: \_\_\_\_\_

Operation schedule/Set points: humidity controls set to ~ 40% RH.Areas served: Surgical Suite

Condition/Comments/Problems: Planned renovations include: rebuild fan,  
new fan motor, new VFD for fan/motor, new cooling coils,  
new preheat coils to be located at AHU instead of OA intake.

Sketch AHU (show measurements) AH-14

## Renovation to surgical suite AHU

Rebuild Fan ✓

New motor ✓

New FID on motor ✓

New cooling coils ✓

New preheat coils (at unit) ✓

Kitchen Make up air  
AIR HANDLING UNIT DATA SHEET

AHU I.D. No.: MVA Location: 3rd Fl. Date: 10/25

Manufacturer Name: P/P Model: P 490 SWSE

AHU Characteristics :

Supply: ☒ Return ☐ Exhaust: ☐ ~~ORDER~~ Serial #: AFB44B

Flow control? Constant ☒ VSD ☐ Inlet Guide Vanes ☒ Other ☐ Part No: MAKE UP AIR

Is motor in airstream? Supply ☐ Return ☐ No ☒ Wide open (100%)

Smoke detector? ☐ Smoke damper? ☐

Humidifier type ☐ Condition ☐

Economizer function? ☐ Operating correctly? ☐ On temp. ☐

Heat recovery potential? ☐

Chilled water valves: 2-way ☐ 3-way ☐ Balancing valve ☐

~~Hot water~~ <sup>Steam</sup> valves: 2-way ☒ 3-way ☐ Balancing valve ☐

Coils: Preheat: ☒ Cooling: ☐ Heat: ☐ Reheat: ☐

Air Filter Type: Prefilter Roll → filters very dirty

After filter Bag

Air Temp's: Design: OSA ☐ Rtn ☐ Mixed ☐ LPrHt ☐ LCC ☐ LHC ☐

Measured: OSA ☐ Rtn ☐ Mixed ☐ LPrHt ☐ LCC ☐ LHC ☐ 66°F

Air Flows: Nameplate: CFM 32000 S.P. 2.5 RPM 684

Measured : CFM ☐ S.P. 2.8 RPM 795

Cooling capacity Tons: Design ☐ Calculated ☐

Heating capacity Tons: Design ☐ Calculated ☐

System description/Set points: Field erected unit, draw through, heating only, w steam coil (12 psi, seal on gage)

Operation schedule:/Set points: ☐

Areas served: Kitchen

Condition/Comments/Problems: some dampness at base of htg coil may have a leak

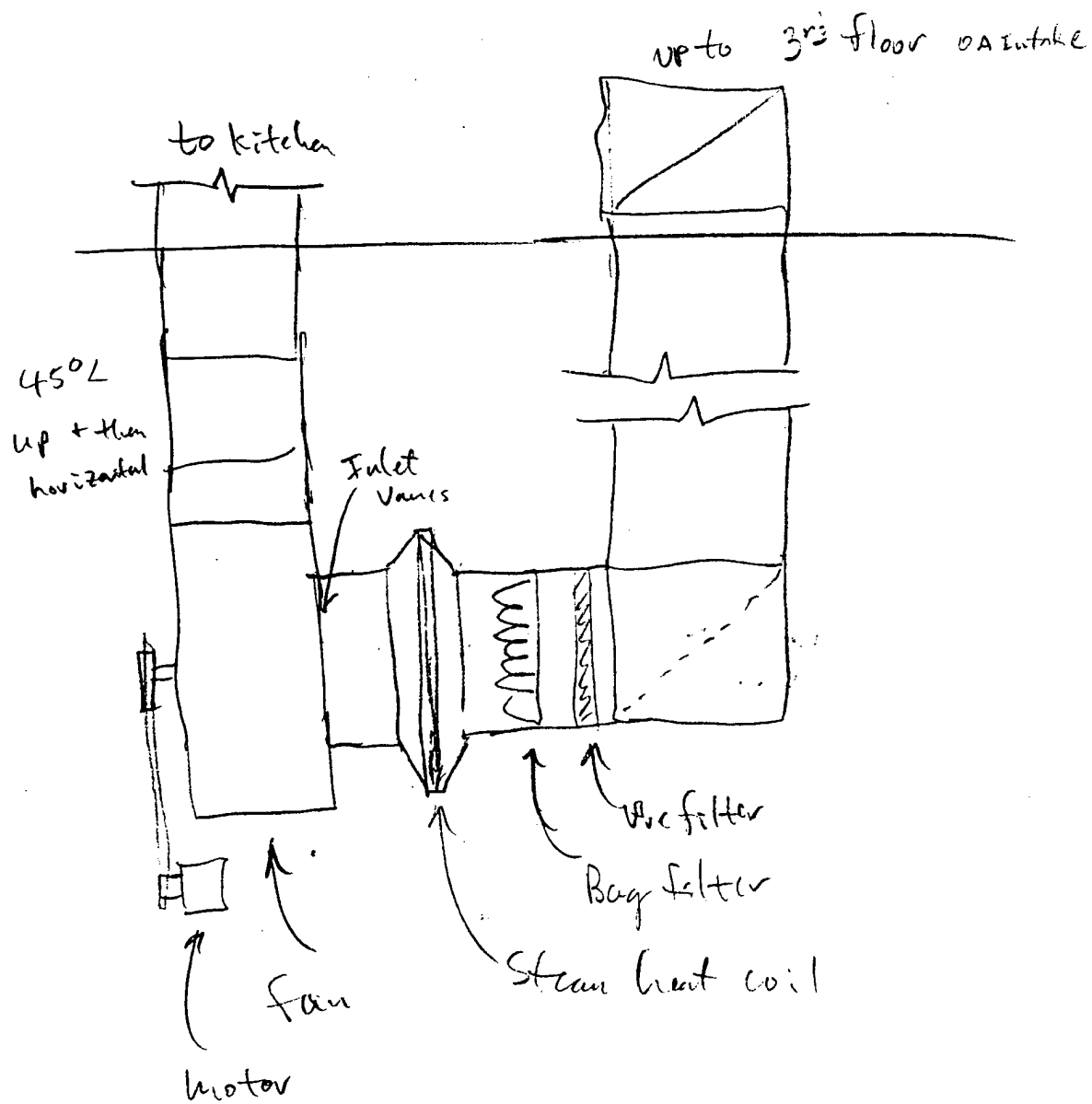
Motor: Lincoln TEFC, 20 hp 1750 RPM, 230/460V, 50/25 A

eff = 86.5, 256T → bearings bad replaced with Magnetek, 230/460v  
49.2/24.6 A, 1740 Rpm, PF = 88.0, eff = 87.5

heating coils are dirty, some fins missing where leaks were

Sketch AHU (show measurements) repaired - overall condition = Fair +

# KITCHEN MAU



Kitchen Exhaust Air  
AIR HANDLING UNIT DATA SHEET

#219

AHU I.D. No.: EF-7 Location: 3rd Fl. Date: 10/25

Manufacturer Name: AAF Model: TYPE W ROTO-CLONE

AHU Characteristics: EXHAUST/DUST COLLECTOR Serial #: W 720108

Supply:      Return      Exhaust: X Arrangement: A

Size: 36

Flow control? Constant X VSD      Inlet Guide Vanes      Other     

Is motor in airstream? Supply      Return      No X

Smoke detector?      Smoke damper?     

Humidifier type      Condition     

Economizer function?      Operating correctly?      On temp.     

Heat recovery potential?     

Chilled water valves: 2-way      3-way      Balancing valve     

Hot water valves: 2-way      3-way      Balancing valve     

Coils: Preheat:      Cooling:      Heat:      Reheat:     

Air Filter Type: Prefilter     

After filter     

Air Temp's: Design: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Measured: OSA      Rtn      Mixed      LPrHt      LCC      LHC     

Air Flows: Nameplate: CFM      S.P.      RPM     

Measured: CFM      S.P. 4.05 <sup>BF</sup> 0.45 <sup>AF</sup> RPM 615

Cooling capacity Tons: Design      Calculated     

Heating capacity Tons: Design      Calculated     

System description/Set points:     

Operation schedule/Set points:     

Areas served:     

Condition/Comments/Problems: WATER/DUST COLLECTOR APPEARS TO BE OFF

Motor: 100hp, Lewis Allis/Range maker, 230/460V, 234/117A, 1730 RPM

Sketch AHU (show measurements) AH-18

# ELECTRIC MOTOR DATA SHEET

(234)  
 Equipment ID. SF-1 Location: Rm 2A-1 Function: AHU Date: 10/24  
 Nameplate Data: HP 100 Frame 404T  
 Volts 460 Amps 120 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff ~93.5 RPM 1775

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_



# ELECTRIC MOTOR DATA SHEET

(231)  
 Equipment ID. SF#2 Location: 2nd fl. RM #2A-1 Function: AHU Date: 10/24  
 Nameplate Data: HP 100 Frame 404T  
 Volts 460 Amps 120 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff ~93.5 RPM 1800

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

(232)  
 Equipment ID. SF#3 Location: 2nd fl. RM #2A-1 Function: AHU Date: 10/24  
 Nameplate Data: HP 100 Frame 404T  
 Volts 460 Amps 120 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 93.5 RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. 1A Location: 3A-01 Function: RETURN Date: 10/25/95

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts 460 Amps 37 Phases 3 PF 0.85 kW (1) 25.1 Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases 3 kW 15.8 RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: Conto Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Reading A = 5.6 + Reading B = 10.2 E = 15.8

Equipment ID. 1B Location: 3A-1 Function: Rtn Fan Date: 10/25

Nameplate Data: HP 30 Frame 286T

Volts 460 Amps 40 Phases 3 PF 0.85 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases 3 kW 23.4 RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

Reading A = 7.2 kW + B = 16.2 kW = 23.4 kW

## ELECTRIC MOTOR DATA SHEET

Equipment ID. SF-6 #234 Location: Rm 30-2 Function: Supply Fan Date: 10/25  
Nameplate Data: HP 40 Frame 234T  
Volts 460 Amps 52 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1775

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. SF-5 #154 Location: Rm 5B-22 Function: Supply Fan Date: 10/25  
Nameplate Data: HP 20 Frame 256T  
Volts 460 Amps 25.2 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1755

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

## ELECTRIC MOTOR DATA SHEET

SF-4A (EAST)

Equipment ID. #236 Location: 14<sup>th</sup> FLR. E. Function: AHU Supply E. Tower Date: 10/25Nameplate Data: HP 125 Frame 405TVolts 460 Amps 146 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 93.6 RPM 1775(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$ 

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW &lt; 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

SF-4B (WEST)

Equipment ID. #235 Location: 14<sup>th</sup> FLR W Function: AHU Supply W. Tower Date: 10/25Nameplate Data: HP 125 Frame 405TVolts 460 Amps 144 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 93.6 RPM 1770(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$ 

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW &lt; 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. (WEST) RF-2B Location: 14th Fl WEST Function: Return Date: 10/25  
 Nameplate Data: HP 30 Frame 286T  
 Volts 460 Amps \_\_\_\_\_ Phases 3 PF \_\_\_\_\_ kW (1) Eff \_\_\_\_\_ RPM 1760  
 (1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$   
 Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) 1690-1730  
 (2) Not necessary to measure RPM unless measured kW < 50% of calculated kW  
 Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_  
 Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_  
 Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) Eff \_\_\_\_\_ RPM \_\_\_\_\_  
 (1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$   
 Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2)  
 (2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW  
 Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_  
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 \_\_\_\_\_  
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# ELECTRIC MOTOR DATA SHEET

Equipment ID. Exh #15 Location: 3<sup>rd</sup> FL Warehouse Function: Exhaust Date: 10/25

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW 2.55 RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

A = 1.15 + B = 1.4 = 2.55 kW

Equipment ID. Exh #13 Location: 3<sup>rd</sup> FL Warehouse Function: Exhaust Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW 3.7 RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

1.2 + 2.5 = 3.7 kW

# ELECTRIC MOTOR DATA SHEET

Equipment ID. Exh #14 Location: 3<sup>rd</sup> FLR W/HSE Function: Exhaust Date: 10/25

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases 3 PF \_\_\_\_\_ kW (1) 0.75 Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1) kW = volts \* amps \* sqrt(# phases) \* 0.85 / 1000

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Reading A = 0.55 + Reading B = 0.75 kW

Equipment ID. Exh #16 Location: 3<sup>rd</sup> FLR W/HSE Function: Exhaust Date: 10/25

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1) kW = volts \* amps \* sqrt(# phases) \* 0.85 / 1000

Measured: \_\_\_\_\_ Phases 3 kW 4.0 RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: Cont. Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

Read A = 1.2 + Read. B = 2.8 = 4.0 kW

# ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: Rm 3A-1 Function: KIT. EXH. Date: 10/25/95

Nameplate Data: HP 100 Frame 405T

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: Rm 3A-1 Function: K. MAKE-UP Date: 10/25/95

Nameplate Data: HP 20 Frame 256T

Volts 460 Amps 25 Phases 3 PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_



# ELECTRIC MOTOR DATA SHEET

Equipment ID. EF-4 Location: 14TH Fl. TOP AHU Function: EXHAUST Date: 10/25

Nameplate Data: HP 15 Frame 254T

Volts 460 Amps 21 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 87.5 RPM 1750

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

EF-1 (WEST)

Equipment ID. #173 Location: Top of AHU 14th Fl. Function: Exh. Fan Date: 10/25

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 6.8 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1745

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. EF-3 Location: Top of AHU 14th Fl. Function: Exh. Fan Date: 10/25

Nameplate Data: HP 2 Frame 145T

Volts 460 Amps 2.8 Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1740

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. EF-2 (EAST) Location: 14TH FL. TOP AHU Function: EXH. Fan Date: 10/25

Nameplate Data: HP 7.5 Frame 213T

Volts 460 Amps 10.2 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1745

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

Equipment ID. RF-2A (EAST) Location: 14TH FL. TOP AHU Function: INLINE RETURN Date: 10/25

Nameplate Data: HP 30 Frame 286T

Volts 460 Amps 40 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1765

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: Nema C motor

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\_\_\_\_\_

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\_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. EF-8 162 Location: 2nd fl. Rm. #2A1 Function: Exh. Fan Date: 10/25  
 Nameplate Data: HP 15 Frame 184T  
 Volts 460 Amps 7 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1730  
 (1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$   
 Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_  
 (2) Not necessary to measure RPM unless measured kW < 50% of calculated kW  
 Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_  
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 \_\_\_\_\_  
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Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_  
 Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_  
 Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_  
 (1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$   
 Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_  
 (2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW  
 Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_  
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# ELECTRIC MOTOR DATA SHEET

(WEST)

Equipment ID. EF-1 Location: Roof Function: Exhaust Date: 10/25

Nameplate Data: HP 3/4 Frame 487

Volts 115 Amps 5 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1725

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

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Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. #250 Location: 1st FL. M/E Rm Function: CW Booster P. Date: 10/25

Nameplate Data: HP 50 Frame 326T Code g  
Volts 460 Amps 59.5 Phases 3 PF 0.8 kW (1) 1765 Eff 90 RPM 1765

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases 3 kW 1765 RPM (2) 1765

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation:                      Hrs/Wk                     

General condition/comments/Problems: Discharge press. - no gauge

Equipment ID. #251 Location: 1st FL. M/E Rm Function: CW Booster P. Date: 10/25

Nameplate Data: HP 50 Frame 326T Code g  
Volts 460 Amps 59.5 Phases 3 PF 0.8 kW (1) 1765 Eff 90 RPM 1765

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases 3 kW 1765 RPM (2) 1765

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation:                      Hrs/Wk                     

General condition/Comments/Problems:

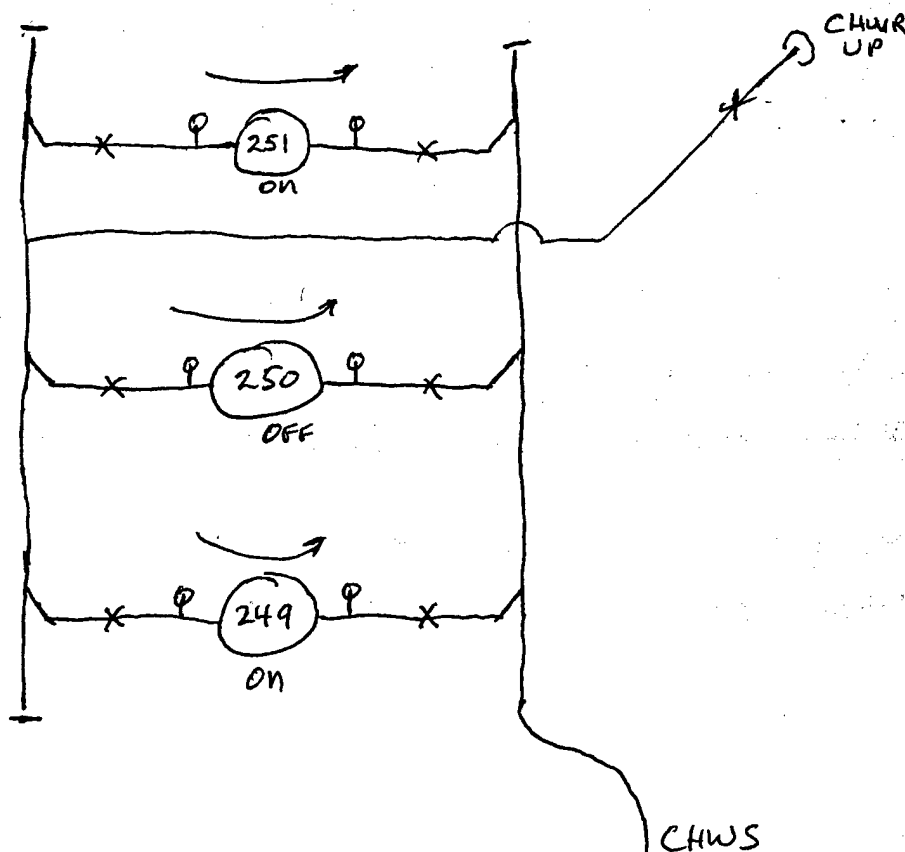
## PUMP DATA:

- #249 Peerless, M# 6AD 11, Pump # 343069, S.O.# 4HD4352, Impeller # 267125B, 2100 gpm, 1760 RPM, 65' TDH, 50 hp motor, DIA = 10 1/4", SP = 56 psi, DP = 104 psi
- #250 Name plate painted over, looks just like #249. Peerless, 50 hp motor, SP = 56 psi, No gage for DP
- #251 Peerless, all data same as #249. SP = 56 psi, DP = 100 psi

## CHILLED WATER PUMPS

### PLAN VIEW

1st FLOOR MECH. RM



PM-3

# ELECTRIC MOTOR DATA SHEET

Equipment ID. P. #254 Location: 1st FL. M/E RM. Function: Condensate Rtn Date: 10/26

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 6.6 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 88% RPM 1725

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

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\_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: 1st FL. M/E RM. Function: Condensate Rtn Date: 10/26

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 6.8 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 88% RPM 1754

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## ELECTRIC MOTOR DATA SHEET

(158)  
Equipment ID. HWSP#1 Location: Room #241 Function: Hot water supply Date: 10/26  
Nameplate Data: HP 25 Frame 284T  
Volts 460 Amps 30.5 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: Suction pressure 111  
Discharge pressure 115

(157)  
Equipment ID. HWSP#2 Location: Rm 2A-1 Function: Hot Water supply Date: 10/26  
Nameplate Data: HP 25 Frame 284T  
Volts 460 Amps 30.5 Phases 3 PF .80 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: Suction pressure 111  
Discharge pressure 118

# ELECTRIC MOTOR DATA SHEET

(156)

Equipment ID. HWSP#3 Location: Rm 2A-1 Function: HW Supply Date: 10/26  
 Nameplate Data: HP 25 Frame 284 T  
 Volts 460 Amps 30.5 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff 88.5 RPM 1760

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

No pressure gauges

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. #1 Location: Rm 2A1 Function: DHW Circ. Date: 10/25

Nameplate Data: HP 1 1/2 Frame 56J

Volts 460 Amps 2.35 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 3450

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. #2 Location: Rm 2A-1 Function: DHW Circ Date: 10/25

Nameplate Data: HP 1 1/2 Frame 56J

Volts 460 Amps 2.2 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. Vac. P#256 Location: 2nd fl. rm. #2A-1 Function: Vacuum Date: 10/25

Nameplate Data: HP 15 Frame 254T

Volts 460 Amps 18.7 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1750

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. Vac. P. #257 Location: 2nd fl. rm. #2A-1 Function: Vacuum Date: \_\_\_\_\_

Nameplate Data: HP 15 Frame 1

Volts 460 Amps 19.3 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. 271 Location: Rm 2A-1 Function: \_\_\_\_\_ Date: 10/25

Nameplate Data: HP 15 Frame 254T

Volts 460 Amps 19.8 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: Located on booster pump skid  
Discharge pressure 120 #

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. #274 Location: 2nd Fl. rm, 2A-1 Function: \_\_\_\_\_ Date: 10/21

Nameplate Data: HP 15 Frame 254 T

Volts 460 Amps 19.8 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: LOCATED on Booster Pump SKID  
Disch. Press. 79#

Equipment ID. \_\_\_\_\_ Location: 2nd Fl. rm #2A-1 Function: \_\_\_\_\_ Date: 10/24

Nameplate Data: HP 10 Frame 215 T Code H

Volts 460 Amps \_\_\_\_\_ Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1745

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: Nema design B motor  
LOCATED ON Booster Pump SKID  
Discharge Press. 80#

# ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: 10/24

Nameplate Data: HP 15 Frame 254T code g

Volts 460 Amps 20 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1750

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: Located on Booster Pump SKID  
545, Press. Pump SKID #108  
DISCHARGE line press. #76

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: 10/24

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: Nema design B MOTOR

## ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: Rm 3 $\phi$ -2  
3<sup>rd</sup> FLR Function: BOOSTER Date: 10/25  
Nameplate Data: HP 1 1/2 Frame 213T  
Volts 400 Amps 11 Phases 3 PF .8 kW (1) \_\_\_\_\_ SF Eff .15 RPM 1750

(1) kW = volts \* amps \* sqrt(# phases) \* 0.85 / 1000

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: 82 PSI - Suction Line

EXIT 92 PSI DISCHARGE Line

Temp. 44 Suction side

Server OR, AHU-6

Equipment ID. \_\_\_\_\_ Location: Rm 3 $\phi$ -2  
3<sup>rd</sup> FLR Function: BOOSTER Date: 10/25  
Nameplate Data: HP 1 1/2 Frame 145T COND J  
Volts 400 Amps 2.4 Phases 3 PF .8 kW (1) \_\_\_\_\_ SF Eff 1.15 RPM 1745

(1) kW = volts \* amps \* sqrt(# phases) \* 0.85 / 1000

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: Server OR, AHU-6



# ELECTRIC MOTOR DATA SHEET

220 + 221

Equipment ID. AIR COMP Location: 3A-1 Function: MED. AIR Date: 11-26-95

Nameplate Data: HP 7.5 Frame 213T

Volts 460 Amps 4.6 Phases 3 PF .85 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1750

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  NEMA B

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: 3A-1 Function: MEDICAL  
AIR Date: 10-26-95

Nameplate Data: HP 15 Frame 215B

Volts 460 Amps 17.5 Phases 3 PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 3505

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  NEMA B

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. #252 Location: Rm 5B-22 Function: Booster Date: 10/25

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 6.6 Phases 3 PF 1.15 kW (1) 1745 Eff 1.15 RPM 1745

(1) kW = volts \* amps \* sqrt(# phases) \* 0.85 / 1000

Measured: Phases 3 kW 1745 RPM (2) 1745

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation:                      Hrs/Wk                     

General condition/comments/Problems: SERVES ICU, AHU 5

Equipment ID. #154 Location: Rm 5B-22 Function: Booster Date: 10/25

Nameplate Data: HP 1 Frame 143T

Volts 460 Amps 1.8 Phases 3 PF 0.8 kW (1)                      Eff                      RPM                     

(1) kW = volts \* amps \* sqrt(# phases) \* 0.85 / 1000

Measured: Phases 3 kW                      RPM (2)                     

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation:                      Hrs/Wk                     

General condition/Comments/Problems: SERVES ICU, AHU 5

## CHILLER DATA SHEET

Equipment ID: #1 Location: Plant (West) Date: 10/26  
Operator Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Manufacturer Name: YORK Model: YT 16 M6 F2-CB C  
Chiller Type: Electric Centrifugal, R11  
Condenser Type: Air \_\_\_\_\_ Water X  
Service Area: Hospital and "the hill", Capacity  $\approx$  1000 tons

## Operating Data:

Evaporator Water Temps: Design: Supply \_\_\_\_\_ F \_\_\_\_\_ PSI Return \_\_\_\_\_ F \_\_\_\_\_ PSI  
Measured: Supply 51 F 56 PSI Return 58 F 52 PSI  
Condenser Water Temps: Design: Supply \_\_\_\_\_ F \_\_\_\_\_ PSI Return \_\_\_\_\_ F \_\_\_\_\_ PSI  
Measured: Supply 72 F 5 PSI Return 72 F 5 PSI

## Pump Data:

	Mfg	Model	HP	GPM	Suction Press	Discharge Press
Condenser:	<u>Peerless</u>	<u>16A XB</u>	<u>125</u>	<u>3210</u>	_____	_____
Ch. Water:	_____	_____	_____	_____	_____	_____

Are multiple chillers manifolded? Yes  
Are pumps constant flow? Yes  
Potential for conversion to variable flow? Good

Control System/Set points: \_\_\_\_\_

Maintenance Schedule: \_\_\_\_\_

O&M log available: Yes No Copies Obtained: Yes No

Heat Recovery Potential: (Condenser accessible, heat load nearby) \_\_\_\_\_

General Condition/Comments/Problems: Not running during survey.

Compressor model: YTK 144, SN: YCSM 075592

Sketch Chilled Water System \_\_\_\_\_

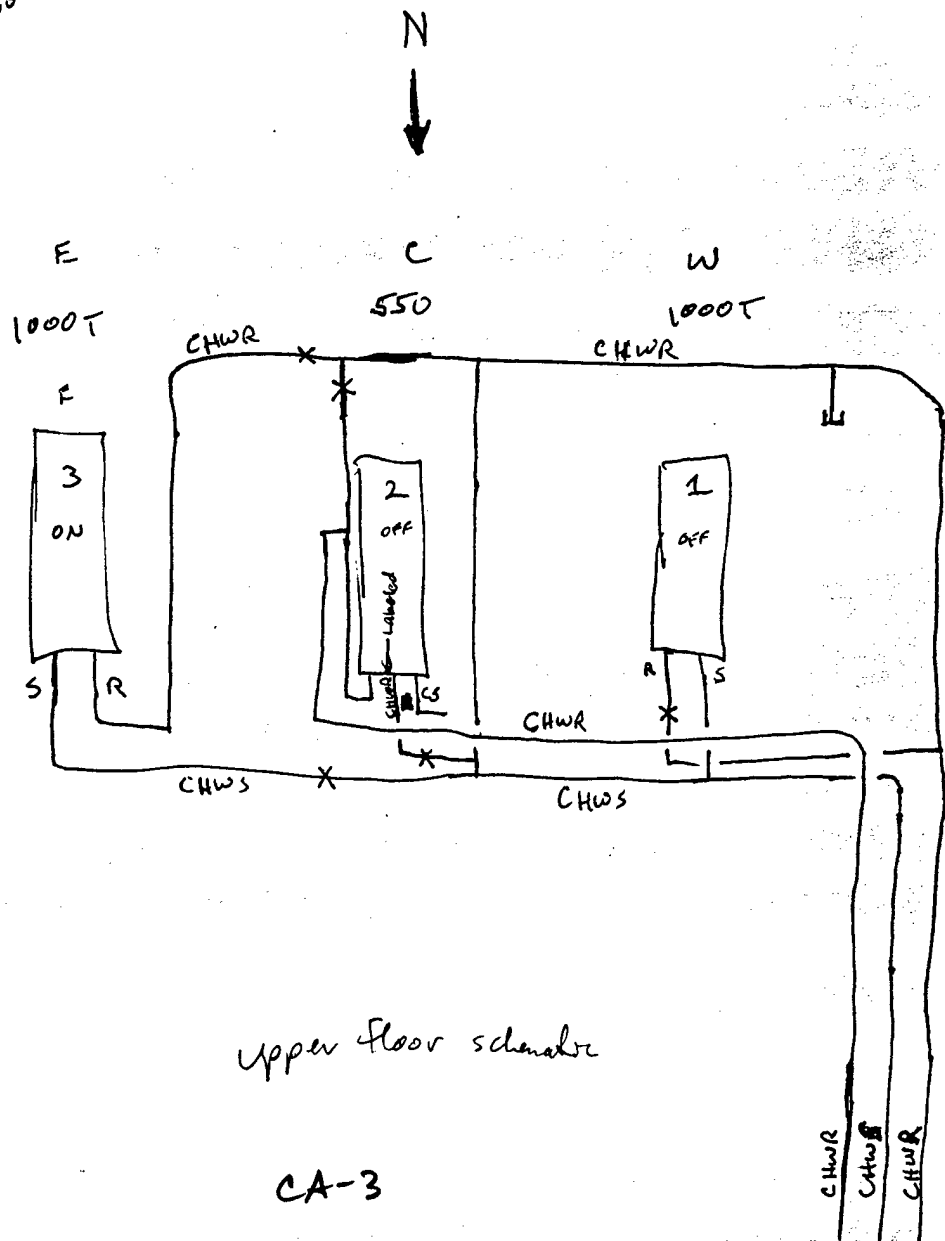
Sketch Condenser Water System \_\_\_\_\_

# CHILLER LAYOUT

summer max load for chillers 1 & 3 is ~ 170% x 2000 tons ✓

#2 Will run on <sup>very low load</sup> ~~low load~~ ✓  
trips off on High cond temp at 102 to 105°F ✓  
10" recommended have 8" to cond/CT ✓  
run CT for old 470 ton steam turbine chillers ✓

current project will  
replace the two Cent.  
chillers.



## CHILLER DATA SHEET

Equipment ID: # 2 Location: Plant (Cantor) Date: 10/26  
 Operator Name: \_\_\_\_\_ Phone: 706-791-6093  
 Manufacturer Name: TRANE Model: ABDL050FFB06AGBNBLJ00 (THERMACHILL)  
 Chiller Type: GAS ABSORPTION (on oil) MODEL: ABDL500, SN: L94M12443  
 Condenser Type: Air \_\_\_\_\_ Water X  
 Service Area: Hospital and "the hill" Capacity = 500 tons

## Operating Data:

Evaporator Water Temps: Design: Supply \_\_\_\_\_ F \_\_\_\_\_ PSI Return \_\_\_\_\_ F \_\_\_\_\_ PSI  
 Measured: Supply 72 F 0 PSI Return 57 F 63 PSI  
 Condenser Water Temps: Design: Supply \_\_\_\_\_ F \_\_\_\_\_ PSI Return \_\_\_\_\_ F \_\_\_\_\_ PSI  
 Measured: Supply \_\_\_\_\_ F \_\_\_\_\_ PSI Return 76 F 0 PSI

## Pump Data:

	Mfg	Model	HP	GPM	Press	Discharge
Condenser:	<u>Peerless</u>	<u>14LC156</u>	<u>40</u>	<u>1500</u>		
Ch. Water:						

Are multiple chillers manifolded? Yes  
 Are pumps constant flow? Yes  
 Potential for conversion to variable flow? \_\_\_\_\_

## Control System/Set points:

Cooling tower water temp must be  $\geq 72^{\circ}\text{F}$ ; set tower fans to come on at  $84^{\circ}\text{F}$  and off at  $78^{\circ}\text{F}$  or ①  $84/81$  ②  $82/78$

Maintenance Schedule: Trane O+M manual ABDL-M-1  
File # SV-RF-ABS-ABDL-M-1-791  
Thermochill direct-fired absorption chiller

O&M log available: Yes No Copies Obtained: Yes No

Heat Recovery Potential: (Condenser accessible, heat load nearby)

Cool/Heat  
 Input (HHV) gas 5917 MBH } MAX 1972 MBH }  
 oil 42.26 GPH } MIN 14.09 GPH }

General Condition/Comments/Problems: CHW supply connected to CHW return line;

Elec: 180-220 v : Hi Temp SOL Pump 2.2 Kw / 12.0 A

Lo " " " " " "

Refrigerant Pump 0.2 kw / 2.0 A

Purge pump 0.4 kw / 2.0 A

Cooling tower #2 was designed for 470 ton steam turbine chiller, cond line is 8" dia, mfg recommends 10" dia.

Sketch Chilled Water System \_\_\_\_\_

Sketch Condenser Water System \_\_\_\_\_

## CHILLER #2

### ~~BUILDING~~ DATA NOTES

Survey by: W. T. Todd

Date: 10-26-95

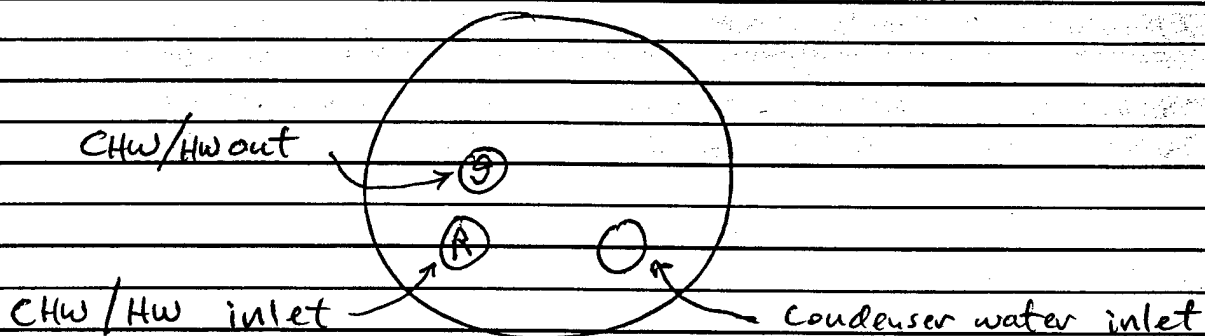
Notes & Comments: According to operator: Condenser water pump, piping, and cooling tower #2 are not adequately sized according to chiller specs.

This chiller will run at very low loads but then trips off on high condenser temperature at 102°F to 105°F.

Cooling tower #2 was designed for the old 470 ton steam turbine (125 psi) centrifugal chiller.

Condenser water piping is 8" diameter. Chiller condenser water supply inlet diameter is 10".

From Mfg. data: 500 tons



### Catalog Performance Data for ABDL-500

- Minimum entering cooling water temp. = 72°F
- Condenser/Absorber flow rates ① min = 1157 gpm, Max = 2453 gpm  
② 2117 gpm @ 54/44 chw & 85/95 cw
- Chilled water flow rates ① min = 584 gpm, max = 1466 gpm  
② 1152 gpm @ 54/44 chw & 85/95 cw

# Gas Abs. Chiller TEST

	3 pm				
CWS	25 psi	25	78F	25 psi	82°
CWR	11 psi	11	98F	11 psi	104°
CHWS	43 psi	46	53F	48 psi	53°
CHWR	72 psi	73	64F	75 psi	60°

OAT = 58/47      SUBTRACT ~2°F for bubble

4:10 pm 11/16/95

CWS	50 ps	52
CWR	76 psi	60
CHWS	25 psi	84
CHWR	11 psi	105

OAT = 58

3445 cfm nat gas flow

$$3445 \frac{\text{CF}}{\text{hr}} \times 1030 \text{ Btu/CF} \Rightarrow 3458350 \text{ Btu/hr input}$$

$$3.458 / 5.917 \Rightarrow 60\% \text{ Full load Fuel input}$$



## CHILLER DATA SHEET

OAT ~ 48-50°F

Equipment ID: #3 Location: Plant (East) Date: 10/26  
 Operator Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Manufacturer Name: YORK Model: YT L6 M6 F2-CB C  
 Chiller Type: Electric Centrifugal  
 Condenser Type: Air \_\_\_\_\_ Water X  
 Service Area: Hospital and "the hill", Capacity ~ 1000 tons

## Operating Data:

Design  $\Delta P = 15.8' = 6.9 \text{ psig}$   
 Evaporator Water Temps: Design: Supply 43 F \_\_\_\_\_ PSI Return 55 F \_\_\_\_\_ PSI  
 Measured: Supply 42 F 61 PSI Return 46 F 64 PSI  
 Condenser Water Temps: Design: Supply \_\_\_\_\_ F \_\_\_\_\_ PSI Return \_\_\_\_\_ F \_\_\_\_\_ PSI  
 Measured: Supply 48.5 F 26 PSI Return 66.5 F 14 PSI

## Pump Data:

Design  $\Delta P = 23.6' = 10.3 \text{ psig}$ 

	Mfg	Model	HP	GPM	Press	Press	Pump
Condenser:	AURORA	VB572429	125	3200			
on ch. Water:	Pearless	NA	100		30-35		120
Are multiple chillers manifolded?	Yes	"	"		80		100
Are pumps constant flow?	Yes						

Potential for conversion to variable flow? \_\_\_\_\_

Control System/Set points: Leaving CHW set to 41.5°F; Panel readings -  
73% FLA, CHWS @ 41.8°F, CHWR @ 52.3°F

Maintenance Schedule: - oil and filters changed by plant crew  
 (ALL CHILLERS) - tubes cleaned ~ 1/year by plant crew  
 - major repairs done by contractor

O&M log available: Yes No Copies Obtained: Yes No

Heat Recovery Potential: (Condenser accessible, heat load nearby)

General Condition/Comments/Problems: Only chiller running during survey;  
Compressor model: YTK 144, SN YCSM 075593.  
Operator said chws picks up about 2°F before it enters the  
the hospital. Operating at 48% FLA when OAT was 47°F this  
morning; at 10am OAT was 77°F, FLA = 95%, CHWS = 43.0°F,  
CHWR = 55.4°F, gages read 44.2°F / 59 psi, 53.5°F / 61 psi

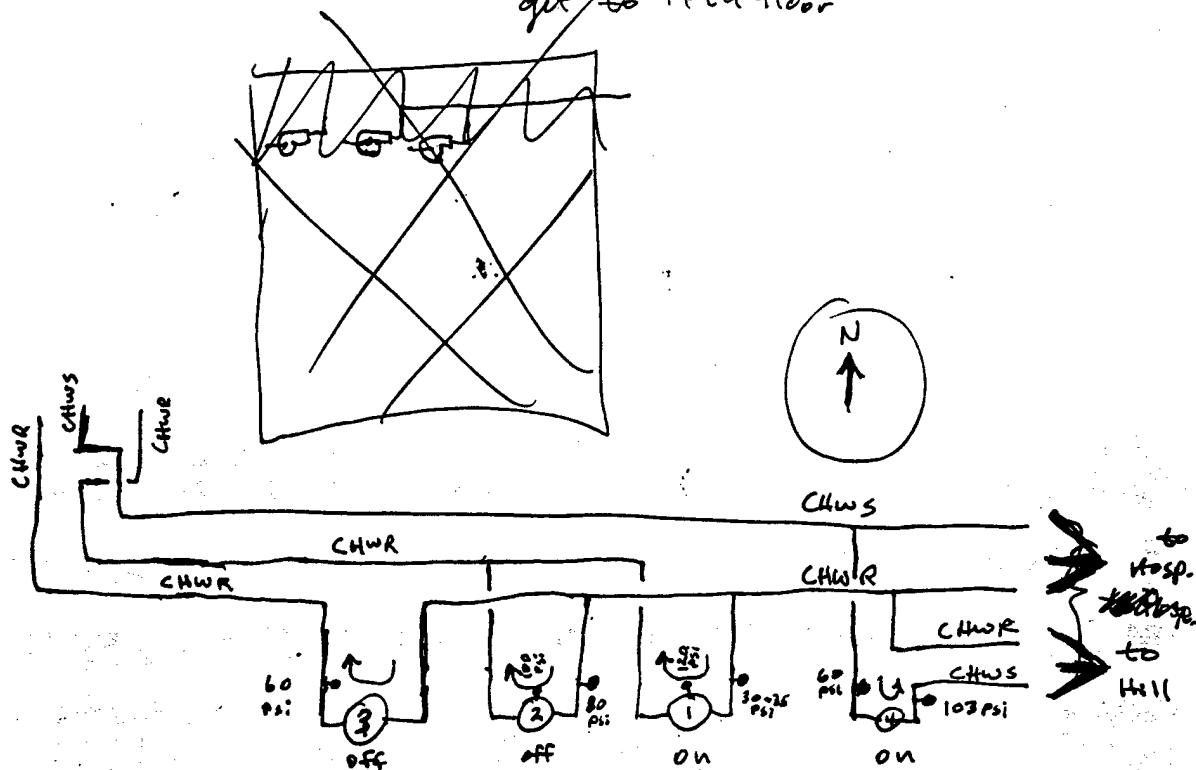
Sketch Chilled Water System ✓Sketch Condenser Water System ✓

CA-7

# CENT. PLANT CHILLED WATER PUMP LAYOUT

run #1 pump when cool (like today)  
run #1+2 pumps when hot

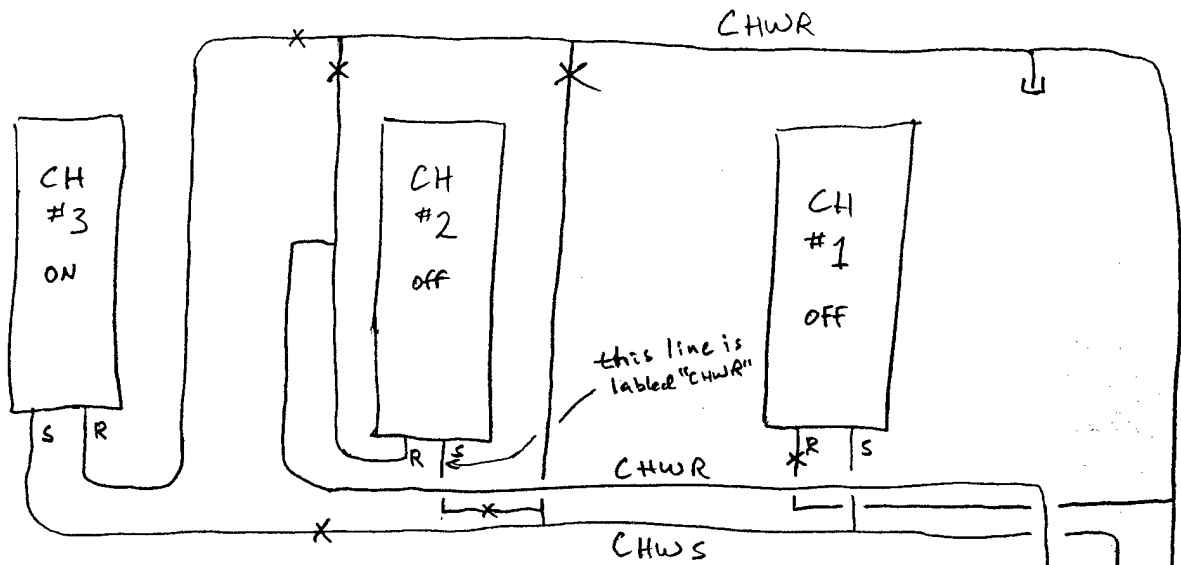
also have 3 booster pumps in hosp. to  
get ~~chilled~~ to 14th floor



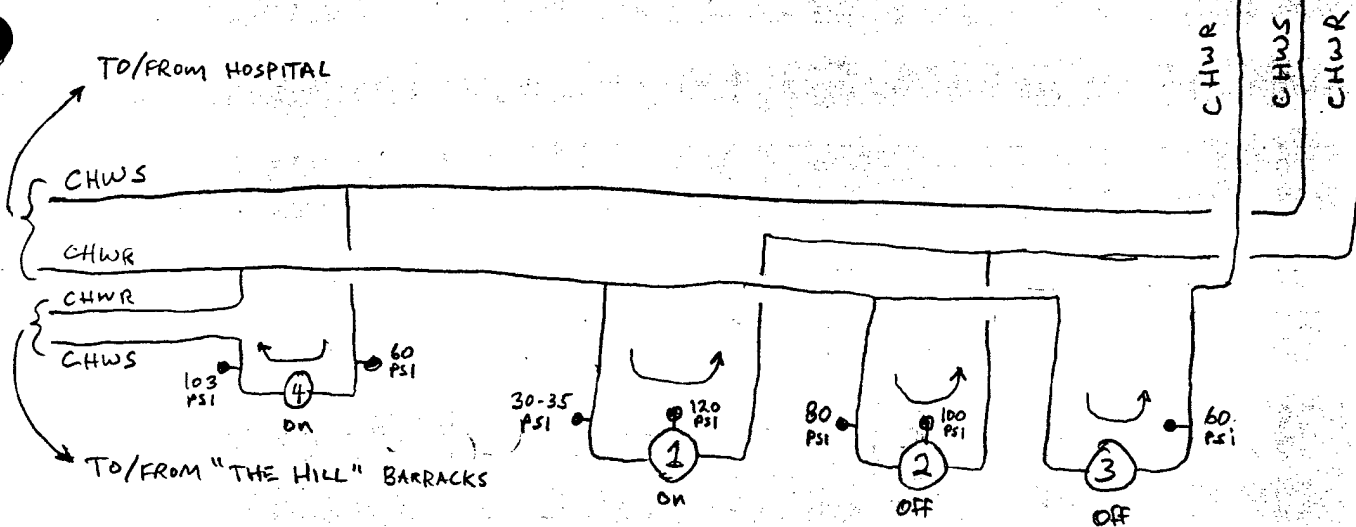
Lower floor schematic

- |                |       |                                     |   |
|----------------|-------|-------------------------------------|---|
| Chillers 1,2+3 | 1 & 2 | Peerless w/100 hp motor             | ✓ |
| Chiller # 2    | 3     | Peerless <del>HPAE 11</del> #485667 | ✓ |
| CHWR+S         |       | W/30 hp motor                       |   |
|                |       | 106642 (stamped on VP)              |   |
| All chillers   | 4     | AURORA # 75-14938-1                 | ✓ |
| to "the Hill"  |       | TYPE 411 BF                         |   |
|                |       | SIZE 4 x 11C                        |   |

N ↑



UPPER FLOOR SCHEMATIC



LOWER FLOOR SCHEMATIC

## CHILLED WATER FLOW DIAGRAM

Notes: CHW Pump #1 runs when it is cool outside (like today). Pumps #1 and #2 run when the weather is hot. There are also 3 more CHW booster pumps in the hospital.

# CHILLERS

## BUILDING DATA NOTES

Survey by: \_\_\_\_\_

Date: 10/26

Notes & Comments: \_\_\_\_\_

2 CHW lines to Hosp ✓

Pump #4 Small pump for "the Hill" Barracks ✓

Control Setting: LCHW T 41.5 set point ✓  
(73% FLA) ✓

control panel { LCHWS 41.8 °F picks up ~ 2 °F before entering hospital ✓  
reading { CHWS 52.3 °F ✓

- fill on generator CT is "gone", made from asbestos ✓  
~~generator CT is gone~~

at 47°F OAT this morning 1 chiller was ~ 48% ✓

Gas Chiller: pump, pipe & tower are not adequately sized according to chiller specs. ✓

2100 kW gen at plant - chiller, ID fans, hospital ✓  
800 kW gen in hospital. turn off elevator motors & fans ✓

- CHW pumps & CT's are not wired to generator ✓  
so on power failure - can not provide cooling ✓

Trans O+M manual ABDL-M-1 ✓

File # SV-RF-ABS-ABDL-M-1-791 ✓

Thermax direct-fired Absorption chiller ✓

1/22/96

Chw - P#1		Control Room Chw P1 P2		Chiller #3					
Suc	DisC	Suc	DisC	DisC	FLW%	inlet	outlet	CHWS	CHWR
28	95	64	~58	~58	45	58 <sup>0</sup> 65 <sup>0</sup>	58 <sup>0</sup> 53 <sup>0</sup>	41.5	52.1
28	100	64	68	69	40	50	48	41.5	49.4
28	105	64	79	81	40	61	59	41.2	49.0

- ① Chw also Flowing through Chiller #1
- ② Chw to Chiller #1 valved off.

Operator said 2<sup>CHW</sup> pumps running in hospital basement

Chiller & Chw pumps off

25+ 84 64 59 59 49 47

CHP#2 69 90

1/23/96

Control Room gauges

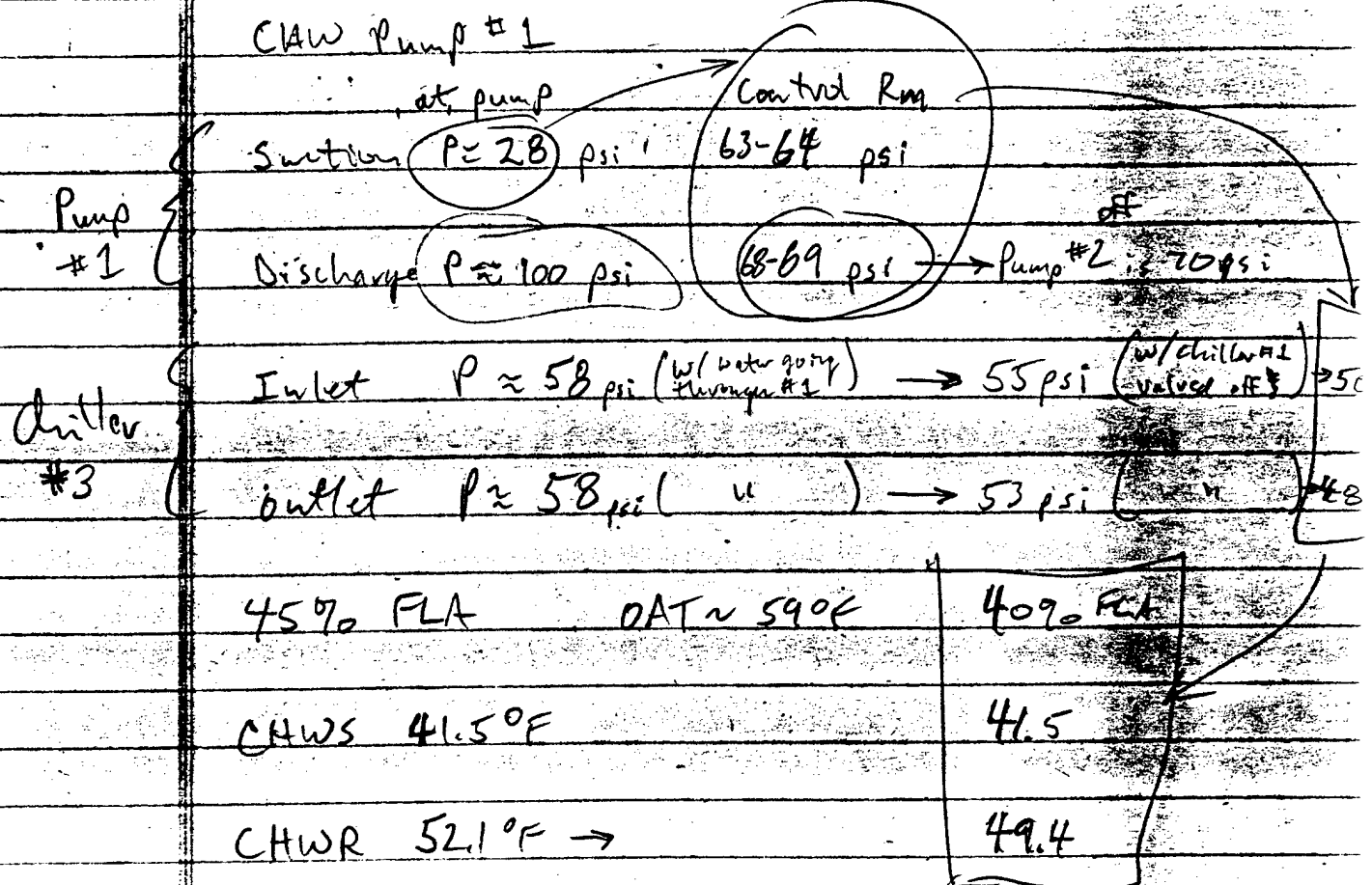
Return Pressure = 64 psi

#1 disch. press = 49 psi

#2 " " = 51 psi

CA-11

800-741-2014  
~ 3pm



2 pumps running in hospital basement

- hooked up dp gage  $\rightarrow$  went off scale of 200 in  $\text{H}_2\text{O}$

- Switched gages (use 1 gage to read both ports)  
read 46 psi outlet + 56 psi inlet for about  
1 minute then inlet dropped to 46 psi

## CENTRAL PLANT

### ~~BUILDING~~ DATA NOTES

Survey by: W. T. Todd

Date: 10-26-95

Notes & Comments: They have a 2100 KW generator in the plant and there is an 800 kw generator in the hospital.

The plant generator is wired to the chillers, ID fans and the hospital. The CHW pumps, and cooling tower fans, and condenser water pumps are not wired to the generator so when there is a power failure they can not provide chilled water to the hospital.

When Georgia Power requests them to curtail their demand, they run the chillers and some of the hospital on the generator. They are asked to shed loads many times during the hottest times of the summer. The hospital turns off some elevator motors and some fans.

The operator said the fill for the generator cooling tower is "gone". It is made of asbestos. They have not had overheating problems but he "does not want it to happen on his shift".

## CHILLERS

Summer max load for the two elec. chillers (#1 & #3) is about 170% of a total of 2000 tons.

Chilled water pumps:

Pumps #1 & #2 serve all three chillers, for the hospital Peerless pumps with 100 hp motors

Pump #3 serves chiller #2

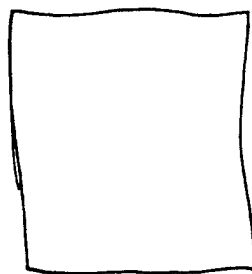
Peerless, M# 4AE11, SN 485667, 106642 stamped on NP 30 hp motor

Pump #4 serves all chillers, for the "hill"

Aurora, M# 75-1413 B-1, TYPE 411 BF, SIZE 4x11C 20 hp motor

## COOLING TOWER LAYOUT

GP: Very often during hottest time of summer ✓  
calls and tells plant to shed loads to ✓  
stay under a certain KW. They run the ✓  
chillers on the generator, pumps and ✓  
CT's only wired to GP. ✓



CT-1

CT-2

CT-3

1 Peerless

SIZE 12x12x20 ✓

3200 gpm ✓

TDH = 101 ft ✓

Model 16HXB ✓

1760 RPM ✓

SN 235803 ✓

125 hp motor (GE) ✓

2 PEERLESS

SIZE 10x10x16½ ✓

40 hp GE motor ✓

1750 RPM ✓

SN: 343055 ✓

85 ft TDH ✓

14 LC 1 STG (SIZE?) ✓

1500 GPM ✓

3 AURORA

V85 72429 ✓

125 HP GE motor ✓

3200 GPM ✓

100 ft HD ✓

1780 RPM ✓

VERLI-LINE ROTATRON ✓

CA-14



# Cooling Towers

Equipment ID: CT #1 Location: See sketch Date: 10-27-95

Manufacturer: Marley 2 Cell Model: # 457-202 Double Flow

Type: Crossflow or Counterflow? \_\_\_\_\_

Percent Loaded: Summer: \_\_\_\_\_ Fall/Spring: \_\_\_\_\_ Winter: \_\_\_\_\_

Describe condition of: \_\_\_\_\_

Fill: Poor condition - algae growth - broken slots

Drift eliminators: Poor large amount of drift - raining

Water distribution: Basin supply valve broken - always flows  
Multiple leaks

Control System/Set points: ~80F Return water temp. to chiller  
See operating logs  
Basin temp. heated by steam coils

Maintenance Schedule: \_\_\_\_\_

O&M log available: Yes ☒ No Copies Obtained: Yes No

Heat Recovery Potential: (Condenser accessible, heat load nearby)

Check BFW temp.

General Condition/Comments/Problems: SN 457-7-1286-71, Cust. Order #3  
Marley Order #7-1286-71

PUMP DATA: Peerless model 16HXB, Size 12x12x20, SN 235803  
3210 gpm, 101 ft TDH, 1760 RPM, 125 HP MOTOR (GE)

CT #1 has 2 Cells

Typ:

# Cooling Towers

Equipment ID: CT#2 Location: See sketch Date: 10-27-95

Manufacturer: Marley / Doubleflow Model: #372-101, 1 Cell

Type: Crossflow or Counterflow? \_\_\_\_\_

Percent Loaded: Summer: \_\_\_\_\_ Fall/Spring: \_\_\_\_\_ Winter: \_\_\_\_\_

Describe condition of:

Fill: Good - few breaks

Drift eliminators: Good

Water distribution: Distributed on deck well - many drain holes partially blocked with pipe scale - portions uncovered - large flow down sides and corners bypassing fill and raising basin/cols temp. - One large leak over main wall at NE corner

Control System/Set points: Fan runs continuously now since absorber has trouble staying on line

Maintenance Schedule: Reworked Spring of 95 when absorber installed

O&M log available: Yes (No) Copies Obtained: Yes No

Heat Recovery Potential: (Condenser accessible, heat load nearby)

Check boiler FW temp.

General Condition/Comments/Problems: SN 372-7-1287-71, Cust Order #3, Marley Order # 7-1287-71, 96" fan diameter, 464 rpm, 25 hp fan motor, 44° final pitch angle. Designed for 470 Ton Steam (125 psi) turbine centrifugal chiller. Leaking severely

PUMP DATA: Peerless model 146C 1 STG?, size 10 x 10 x 16 1/2, SN 343055, 1500 gpm, 85 ft TDH, 1750 rpm, 40 hp motor (GE)

Looks good, but water temps. to chillers is higher than expected - see logs

# Cooling Towers

Equipment ID: CT#3 Location: See sketch Date: 10-27-95

Manufacturer: Marley Model: 374-101?, 2 Cells

Type: Crossflow or Counterflow? 222-522

Percent Loaded: Summer: \_\_\_\_\_ Fall/Spring: \_\_\_\_\_ Winter: \_\_\_\_\_

Describe condition of:

Fill: Fair to poor - little breezeage - moderate algae  
buildup

Drift eliminators: Fair - Several major breaks - No ext fins  
Sides not angled

Water distribution: Basin make-up continuous flow -  
Fair distr

Control System/Set points: ~BOF

Maintenance Schedule: \_\_\_\_\_

O&M log available: Yes No Copies Obtained: Yes No

Heat Recovery Potential: (Condenser accessible, heat load nearby)

Check B&W temp

General Condition/Comments/Problems: SN 374-7-1288-71, Cust Order #3, 2?  
Marley Order # 7-1288-71, 120" fan dia, 318 rpm, 40 hp, 55° FPA

SN 7-1141-86, GRDR # 16770 (cell 2) & 16778 (cell 1)  
Face D " & B "

Pump Data: Aurora, Verli-line Rotatron, # V85 72429, 3200 gpm,  
100ft HD, 1780 rpm, 125 hp GE motor  
Pump leaks severely

## ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: Cool. Plant Function: Chiller Comp. Date: 10/26

Nameplate Data: HP 870 Frame 5880 Y

Volts 4160 Amps 106 Phases 3 PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 3600

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

York Part # 024-24021-490

1-5119-51499-1-2

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

## ELECTRIC MOTOR DATA SHEET

Equipment ID. # 1 Location: Cent. Plant Function: Chilled water supply Date: 10/26

Nameplate Data: HP 100 Frame 404TS

Volts 460 Amps 123 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1770

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code F

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

DISCHARGE WTR. PRESS. 120 (at Pump)  
SUPPLY WTR. PRESS. 33

SERVES CENTRIFUGALS

Equipment ID. # 2 Location: Cent. Plant Function: CWS Date: 10/26

Nameplate Data: HP 100 Frame 404TS

Volts 460 Amps 122 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1775

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code F

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

DISCHARGE Press. Water at Pump 100

SUCTION Press Water 80

SERVES CENTRIFUGALS

## ELECTRIC MOTOR DATA SHEET

Equipment ID. #3 Location: Cent. Plant Function: CWS Date: 10/26Nameplate Data: HP 30 Frame 286TVolts 440 Amps 37.3 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code G

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW &lt; 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

SUCTION 60 PSISERVES ABSORPTION (CH #2)Equipment ID. \_\_\_\_\_ Location: Cent. Plant Function: Air Compressor Date: 10/26Nameplate Data: HP 30 Frame 286TVolts 460 Amps 38 Phases 3 PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code F

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW &lt; 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

## ELECTRIC MOTOR DATA SHEET

Equipment ID. #4 Location: Cent Plant Function: CWS Date: 10/26

Nameplate Data: HP 20 Frame 256T Code G

Volts 460 Amps 25 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: Discharge P 100  
Suction P 59

SERVES MEDICAL BARRACKS

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

## ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: Cooling Tower CT #2 Function: Condenser W. P. Date: 10/26  
Nameplate Data: HP 40 Frame B324TP16  
Volts 460 Amps 50 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1760

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: CT #1 Function: Condenser Water P. Date: 10/26  
Nameplate Data: HP 125 Frame B405TP20 Code G  
Volts 460 Amps 144 Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1770

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_



# ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: CT#3 Function: Condenser Pump Date: 10/26

Nameplate Data: HP 125 Frame 1405 TP20

Volts 460 Amps 148 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff 92.4 RPM 1780

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$  code G

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: CT#3 Function: CT. FAN Date: 10/26

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

Fans inaccessible  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. Cell 1 Location: Cooling Twr #1 Function: CT FAN Date: 10/26  
 Nameplate Data: HP 40 Frame 324T  
 Volts 460 Amps 52 Phases 3 PF      kW (1)      Eff      RPM       
 (1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$  CODE G  
 Measured: Phases      kW      RPM (2)       
 (2) Not necessary to measure RPM unless measured kW < 50% of calculated kW  
 Hours of Operation:      Hrs/Wk as needed, always available

General condition/comments/Problems:       
      
      
      
    

Equipment ID.      Location:      Function:      Date:       
 Nameplate Data: HP      Frame       
 Volts      Amps      Phases      PF      kW (1)      Eff      RPM       
 (1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$   
 Measured: Phases      kW      RPM (2)       
 (2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW  
 Hours of Operation:      Hrs/Wk     

General condition/Comments/Problems:

## ELECTRIC MOTOR DATA SHEET

Cooling Tower #1

Equipment ID. CELL #2 Location: TOP TOWER Function: FAN Date: 10/26/95Nameplate Data: HP 40 Frame 324TVolts 460 Amps 48 Phases 3 PF      kW (1)      Eff      RPM 1760(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code GMeasured: Phases      kW      RPM (2)     

(2) Not necessary to measure RPM unless measured kW &lt; 50% of calculated kW

Hours of Operation:      Hrs/Wk     General condition/comments/Problems:           
      
      
      
      
    

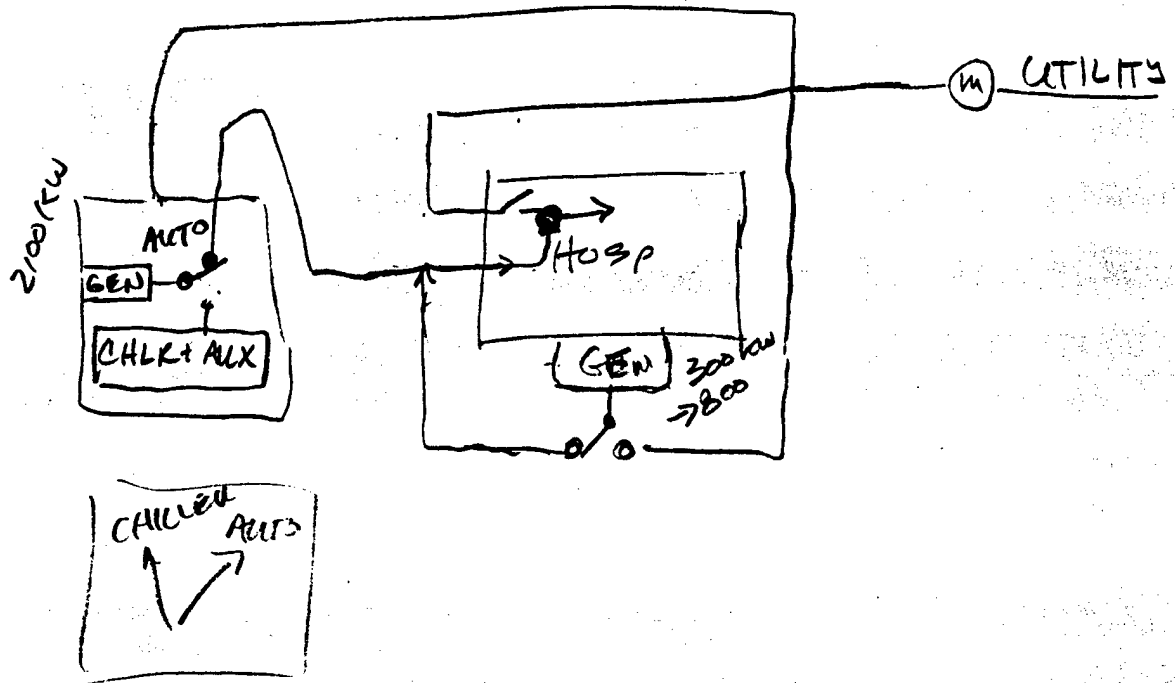
Cooling

Equipment ID. Twr 2 Location: CT 2 Function: CT FAN Date: 10/26Nameplate Data: HP 25 Frame 284TVolts 460 Amps 32 Phases 3 PF .8 kW (1)      Eff      RPM 1750(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$ Measured: Phases      kW      RPM (2)     

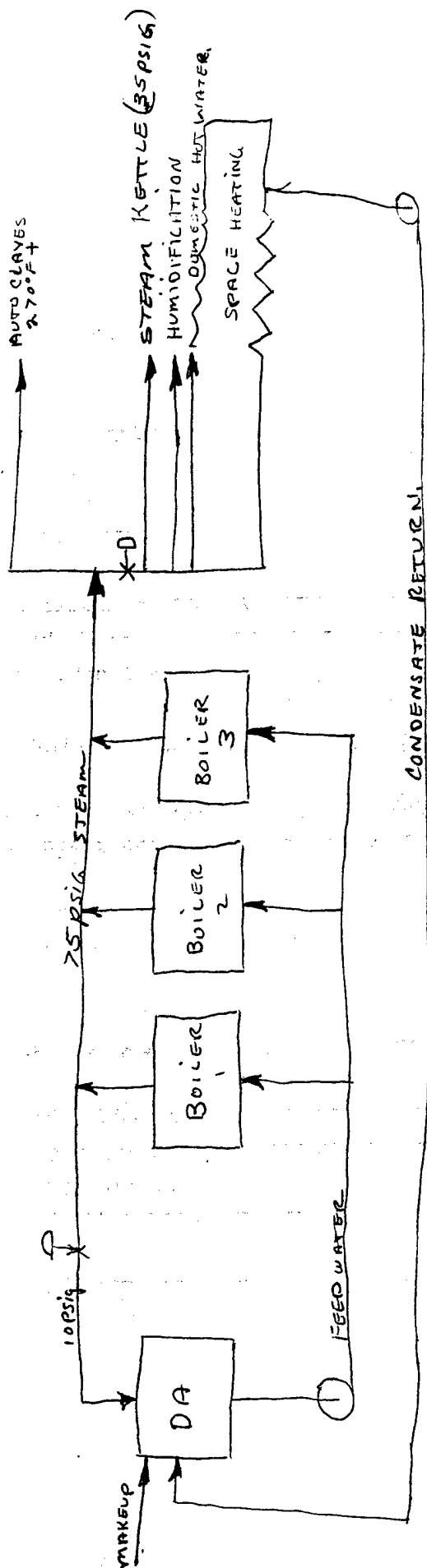
(2) Not necessary to measure RPM unless measured kW &lt; 50% of nameplate kW

Hours of Operation:      Hrs/Wk     General condition/Comments/Problems:

# GENERATOR SCHEMATIC



# STEAM SYSTEM LAYOUT



BA-1

# BOILER DATA SHEET

Boiler ID: 310/1 Location: FORT GORDON Date: 10/26/95  
 Operator Name: \_\_\_\_\_ Phone: 706-791-6093  
 Area or Loads: HOSPITAL & BARRACKS

## Boiler Specifications:

Mfg. & Model No.: INTERNATIONAL; MA. NO. 1BD91; SER. NO. M3709  
 Fuel(s) Type Used: GAS / #2 OIL Input: 20MMBTU/HR. GAS, 19MMBTU/HR OIL  
 Capacity (~~1000~~ or lbs/hr): 15,400 GAS, 14,000 OIL Pressure (psig): 125 DESIGN; 75 OPER.  
 Stack Gas Temperature: 390 F Excess Air (%): NOT MEASURED  
 Boiler Efficiency: 78-82 % Source: MEFR PERFORMANCE (ATTACHED)  
 Burner Type: PEABODY ENGINEERING - GAS RING, OIL GUN, SPINNER VANE  
 Soot blower?: COPEL VULCAN - 1 PER BOILER - ROTARY TYPE.  
 FD Fans?: 1 Size SEE DATA SHEET Motor Data 10 HP.  
 ID Fans?: 1 Size \_\_\_\_\_ Motor Data \_\_\_\_\_  
 Variable Speed Drives?: NO  
 Economizer?: YES SOOT BLOWER INCLUDED  
 Air preheater?: NO  
 O2 trim controls?: YES - DEACTIVATED  
 Steam-driven aux's?: NONE

Blowdown frequency and amount: ONCE PER DAY FOR ONE MIN.  
 Heat recovery potential? \_\_\_\_\_  
 Condensate return %: HIGH - SEE MAKE-UP DATA SHEETS  
 Condition of boiler/piping insulation, lines and traps?: GENERALLY GOOD  
VALVE JACKET REQUIRED ON MAINSTEAM VALVE. INSULATE ATOM. STM. PIPING  
 Operation Schedule: hr/da: \_\_\_\_\_ da/wk: \_\_\_\_\_ mn/yr: \_\_\_\_\_  
 Percent Loaded - Summer: \_\_\_\_\_ Fall/Spring: \_\_\_\_\_ Winter: \_\_\_\_\_  
 Is Boiler Plant Capacity Adequate?: \_\_\_\_\_  
 Automatic Control System/Set points?: \_\_\_\_\_

Maintenance Schedule: AS NEEDED - WELL MAINTAINED

Condition of tubes?: REPORTED AS EXCELLENT - NO HISTORY OF TUBE LEAKS - MINIMAL SCALE REPORTED.  
 Operating Log Available? Y Copies obtained? Y  
 O & M Log Available? N Copies Obtained?: N  
 Chemical Treatment? SO<sub>3</sub>, PO<sub>4</sub>, NaOH, DESCALING AGENT  
 Feed Water Preheated? Y How? DEAIRATOR - 5-10 PSIG  
 General Condition/Comments/Problems: O<sub>2</sub> CONTROLS SHOULD BE RE-CONNECTED.  
ECONOMIZER TO BE REMOVED - BAD INSTALLATION.

Sketch Steam/Hot Water System

BA-2

# BOILER DATA SHEET

Boiler ID: 310/2 Location: FORT GORDON Date: 10/26/95  
 Operator Name: \_\_\_\_\_ Phone: 706-791-6093  
 Area or Loads: HOSPITAL & BARRACKS

## Boiler Specifications:

Mfg. & Model No.: INTERNATIONAL; MOD. NO. 1BD91; SER. NO. M3708-M3710  
 Fuel(s) Type Used: GAS/OIL (#2) Input: 20 MMBTU/HR GAS; 19 MMBTU/HR OIL  
 Capacity (~~Mbb~~ or lbs/hr): 15,400 <sup>935</sup> 871 Pressure (psig): 125 DESIGN, 75 OPER.  
 Stack Gas Temperature: 390 F Excess Air (%): NOT MEASURED  
 Boiler Efficiency: 78-82 % Source: MF&R PERFORMANCE (ATTACHED)  
 Burner Type: PEABODY ENGINEERING - GAS RING, OIL GUN, SPINNER VANE  
 Soot blower?: COPELAND VULCAN - 1 PER BOILER - ROTARY TYPE  
 FD Fans?: 1 Size DATA SHEET Motor Data 10  
 ID Fans?: 1 Size \_\_\_\_\_ Motor Data \_\_\_\_\_  
 Variable Speed Drives?: NO  
 Economizer?: YES - SOOT BLOWER INCLUDED - POOR ECON INSTALLATION  
 Air preheater?: NO  
 O2 trim controls?: YES - DEACTIVATED  
 Steam-driven aux's?: NO

Blowdown frequency and amount: ONCE PER DAY - 1 MIN.  
 Heat recovery potential? \_\_\_\_\_  
 Condensate return %: HIGH - SEE MAKEUP DATA SHEETS.  
 Condition of boiler/piping insulation, lines and traps?: SOOT BLOWER SUPPLY VALVE MISSING; ATOMIZING STEAM PIPING - INSULATE; GENERALLY GOOD CONDITION.  
 Operation Schedule: hr/da: \_\_\_\_\_ da/wk: \_\_\_\_\_ mn/yr: \_\_\_\_\_  
 Percent Loaded - Summer: \_\_\_\_\_ Fall/Spring: \_\_\_\_\_ Winter: \_\_\_\_\_  
 Is Boiler Plant Capacity Adequate?: YES  
 Automatic Control System/Set points?: \_\_\_\_\_

Maintenance Schedule: AS NEEDED - WELL MAINTAINED

Condition of tubes?: REPORTED AS EXCELLENT - NO HISTORY OF TUBE LEAKS. MINIMAL SCALE REPORTED.  
 Operating Log Available? YES Copies obtained? YES  
 O & M Log Available? NO Copies obtained?: NO  
 Chemical Treatment? SO3, PO4, NaOH, DE SCALING AGENT.  
 Feed Water Preheated? YES How? DEAIRATING HEATER - 5-10 PSIG  
 General Condition/Comments/Problems: O2 CONTROLS SHOULD BE RE-CONNECTED ECONOMIZERS TO BE REMOVED - BAD INSTALLATION

# BOILER DATA SHEET

Boiler ID: 310/3 Location: FORT GORDON Date: 10/26/95  
 Operator Name: \_\_\_\_\_ Phone: 706-791-6093  
 Area or Loads: HOSPITAL & BARRACKS

## Boiler Specifications:

Mfg. & Model No.: INTERNATIONAL; MOD. NO. 1BD91; SER. NO. M3711  
 Fuel(s) Type Used: GAS / OIL (#2) Input: 20 MMBTU/HR GAS; 19 MMBTU/HR OIL  
 Capacity (~~Mbb~~ or lbs/hr): 15,400 GAS Pressure (psig): 175 DESIGN - 75 OPER.  
14,600 OIL  
 Stack Gas Temperature: 390 F Excess Air (%): NOT MEASURED  
 Boiler Efficiency: 78-82 % Source: MFR PERFORMANCE (ATTACHED)  
 Burner Type: PEABODY ENGINEERING - GAS RING, OIL GUN, SPINNER VANE  
 Soot blower?: COPEL VULCAN - 1 PER BOILER  
 FD Fans?: 1 Size DATA SHEET Motor Data 10 HP  
 ID Fans?: 1 Size \_\_\_\_\_ Motor Data \_\_\_\_\_  
 Variable Speed Drives?: NO  
 Economizer?: YES - SOOT BLOWER INCLUDED - POOR INSTALLATION - <sup>EGON TO BE</sup> REMOVED  
 Air preheater?: NO  
 O2 trim controls?: YES DEACTIVATED  
 Steam-driven aux's?: NO

Blowdown frequency and amount: ONCE PER DAY - 1 MIN.  
 Heat recovery potential? \_\_\_\_\_  
 Condensate return %: HIGH SEE MAKEUP DATA  
 Condition of boiler/piping insulation, lines and traps?: GENERALLY GOOD  
INSULATE ATOMIZING STEAM PIPING  
 Operation Schedule: hr/da: \_\_\_\_\_ da/wk: \_\_\_\_\_ mn/yr: \_\_\_\_\_  
 Percent Loaded - Summer: \_\_\_\_\_ Fall/Spring: \_\_\_\_\_ Winter: \_\_\_\_\_  
 Is Boiler Plant Capacity Adequate?: YES  
 Automatic Control System/Set points?: \_\_\_\_\_

Maintenance Schedule: AS NEEDED

Condition of tubes?: REPORTED EXCELLENT - NO TUBE LEAK HISTORY -  
MINIMAL SCALE REPORTED  
 Operating Log Available? YES Copies obtained? YES  
 O & M Log Available? NO Copies Obtained?: NO  
 Chemical Treatment? SO<sub>2</sub>, PO<sub>4</sub>, NaOH, DESCALING AGENT  
 Feed Water Preheated? YES How? DEAIRATING HEATER 5-10 PSIG.  
 General Condition/Comments/Problems: O<sub>2</sub> CONTROLS SHOULD BE RE-CONNECTED.  
ECONOMIZERS TO BE REMOVED - BAD INSTALLATION.

Sketch Steam/Hot Water System \_\_\_\_\_

BA-4



# ELECTRIC MOTOR DATA SHEET

Equipment ID. 1 Location: Cent. Plant Function: Boiler FW Pump Date: 10/26

Nameplate Data: HP 15 Frame 254T

Volts 460 Amps 20.0 Phases 3 PF 0.8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1750

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. 2 Location: Cent. Plant Function: Boiler FW Pump Date: 10/26

Nameplate Data: HP 15 Frame 254T

Volts 460 Amps 20.0 Phases 3 PF .8 kW (1)          Eff          RPM 1750

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code G

Measured: Phases          kW          RPM (2)         

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation:          Hrs/Wk         

General condition/comments/Problems:         

Equipment ID. BLR FIDWTR. Pump #3 Location: Cent. PLANT Function: Boiler FW Pump Date: 10/26

Nameplate Data: HP 15 Frame 254T

Volts 460 Amps 20.0 Phases 3 PF .8 kW (1)          Eff          RPM 1750

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: Phases          kW          RPM (2)         

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation:          Hrs/Wk         

General condition/Comments/Problems:

## ELECTRIC MOTOR DATA SHEET

Equipment ID. #1 Location: Cent. Plant Function: Blr. Condensate Pump Date: 10/26

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 7.1 Phases 3 PF      kW (1)      Eff      RPM 1745

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: Phases      kW      RPM (2)     

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation:      Hrs/Wk     

General condition/comments/Problems:     

Duplicate for S2 CONDENSATE PUMP  
Skid

Equipment ID. #2 Location: Cent. PLT. Function: Blr. Condensate Pump Date: 10/26

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 7.1 Phases 3 PF      kW (1)      Eff      RPM 1745

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: Phases      kW      RPM (2)     

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation:      Hrs/Wk     

General condition/Comments/Problems:     

Duplicate for S2 CONDENSATE PUMP  
SKID

## ELECTRIC MOTOR DATA SHEET

Equipment ID. 1 Location: Central Plant Function: BFW XFR Pump Date: 10/26

Nameplate Data: HP 3 Frame 182T

Volts 460 Amps 4.3 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1725

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code J

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

Equipment ID. 2 Location: Central Plant Function: BFW XFR Pump Date: 10/26

Nameplate Data: HP 3 Frame 182T

Volts 460 Amps 4.3 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code J

Measured: Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: Cent plant Function: Boiler ID FAN Date: 10/26  
 Nameplate Data: HP 10 Frame 215T  
 Volts 460 Amps 13.2 Phases 3 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1750

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_  
 Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_  
 Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $kW = volts * amps * \sqrt{\# \text{ phases}} * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# ELECTRIC MOTOR DATA SHEET

Equipment ID. \_\_\_\_\_ Location: Cent. Plant Function: Shop Air Date: 10/26  
 Nameplate Data: HP 1/2 Frame 540  
 Volts 230 Amps 4.1 Phases 1 PF .8 kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM 1725

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/comments/Problems: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Equipment ID. \_\_\_\_\_ Location: \_\_\_\_\_ Function: \_\_\_\_\_ Date: \_\_\_\_\_

Nameplate Data: HP \_\_\_\_\_ Frame \_\_\_\_\_

Volts \_\_\_\_\_ Amps \_\_\_\_\_ Phases \_\_\_\_\_ PF \_\_\_\_\_ kW (1) \_\_\_\_\_ Eff \_\_\_\_\_ RPM \_\_\_\_\_

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$

Measured: \_\_\_\_\_ Phases \_\_\_\_\_ kW \_\_\_\_\_ RPM (2) \_\_\_\_\_

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation: \_\_\_\_\_ Hrs/Wk \_\_\_\_\_

General condition/Comments/Problems: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## ELECTRIC MOTOR DATA SHEET

Equipment ID. #1 Location: Cent Plant Function: Air Compressor Date: 10/26

Nameplate Data: HP 3 Frame 184T

Volts 460 Amps 6.8 Phases 3 PF      kW (1)      Eff      RPM 1745

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code J

Measured: Phases      kW      RPM (2)     

(2) Not necessary to measure RPM unless measured kW < 50% of calculated kW

Hours of Operation:      Hrs/Wk     

General condition/comments/Problems:     

Duplex Air Compressor

Equipment ID.      Location: Cent Plant Function: Air Compressor Date: 10/26

Nameplate Data: HP 5 Frame 184T

Volts 460 Amps 6.8 Phases 3 PF      kW (1)      Eff      RPM 1740

(1)  $\text{kW} = \text{volts} * \text{amps} * \text{sqrt}(\# \text{ phases}) * 0.85 / 1000$  code J

Measured: Phases      kW      RPM (2)     

(2) Not necessary to measure RPM unless measured kW < 50% of nameplate kW

Hours of Operation:      Hrs/Wk     

General condition/Comments/Problems:     

Duplex Air Compressor

~~SWITCHING~~ NOTES

Survey by: \_\_\_\_\_

Date: 10/25/93

Notes & Comments: Missing Insulation in Boiler Area

LINE SIZE	LENGTH	LOCATION
1"	18'	BOILER FRONT - STEAM
2"	10'	FEED WATER
2"	6'	BFP DISCHARGE
2 1/2"	10'	SOOT BLOWER LINE
3"	10'	BFP SUCTION

Generators pick up hospital automatically, but not the plant. Chillers and some aux's can be manually switched to 2100kW generator

Rob Callahan

#25910 Post Heat & Cool Plant

Current contract to install VSD - pumping  
Would like PF correcting capability

#25330 Newer, smaller one has auto-PF correction